OFFICIAL PUBLICATION OF THE PROCEEDINGS AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

DECEMBER 12, 1949
VOLUME 38, NO. 25

AMERICAN DYESTUFF REPORTER

DEVOTED TO TEXTILE CHEMISTRY • BLEACHING • DYEING • PRINTING • FINISHING

MITIN MOTHPROOFING

MITIN* F F CONC, the mothproofing which is effective for the usable life of most woolens and worsteds, is starting a trend of far-reaching importance. The public is eager and willing to pay for this convenient and durable protection.

APPLICATION

Mitin F F Conc is actually a colorless dyestuff applied in the dyebath—no extra equipment, no extra operation. Does not alter hand of fabric, color or fastness of dye or affect the wearer.

COST

Moderate prime cost is only expense involved.

DURABILITY

Withstands dry cleaning, wet cleaning, washing, hot pressing, water and sea water, perspiration, abrasion and sunlight according to the recognized AATCC Tentative Test Methods. Moreover, it withstands combination of dry and wet cleaning, dry cleaning plus light and washing plus light as well as weathering, wearing and mill processing. Remains effective for the usable life of most woolens and worsteds.

TESTED

Years of laboratory tests prove Mitin F F Conc to be effective and durable. Tried and proven in the markets of Continental Europe, Great Britain and Canada.

MITIN F F CONC means new markets, more sales volume for your woolens. Get all the facts now. Send for descriptive literature and scientific data. Or ask to have a Geigy specialist call on you.

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YOU CAN WIN BOTH EYE AND HAND approval with Cyanamid's Finishing Oils. They are extremely effective as softening agents for cotton, rayon and silk, and for hosiery and knitted fabrics. Grades for various textile finishing operations are available for use on the finest as well as for heavy work clothing fabrics.

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The Cyanamid textile specialties described briefly on this page are designed not only to lower your processing costs, but also to improve your product quality and *saleability*.

Investigate the opportunities they offer. Our textile research laboratories and technical staff are ready to co-operate fully with your staff in using these specialties to obtain the most satisfactory results.

Our descriptive booklets, "Textile Specialties" and "DECERESOL Wetting Agents for Textiles" will be mailed to you promptly on request.*

*Reg. U. S. Pat. Off.

AMERICAN Cyanamid COMPANY

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

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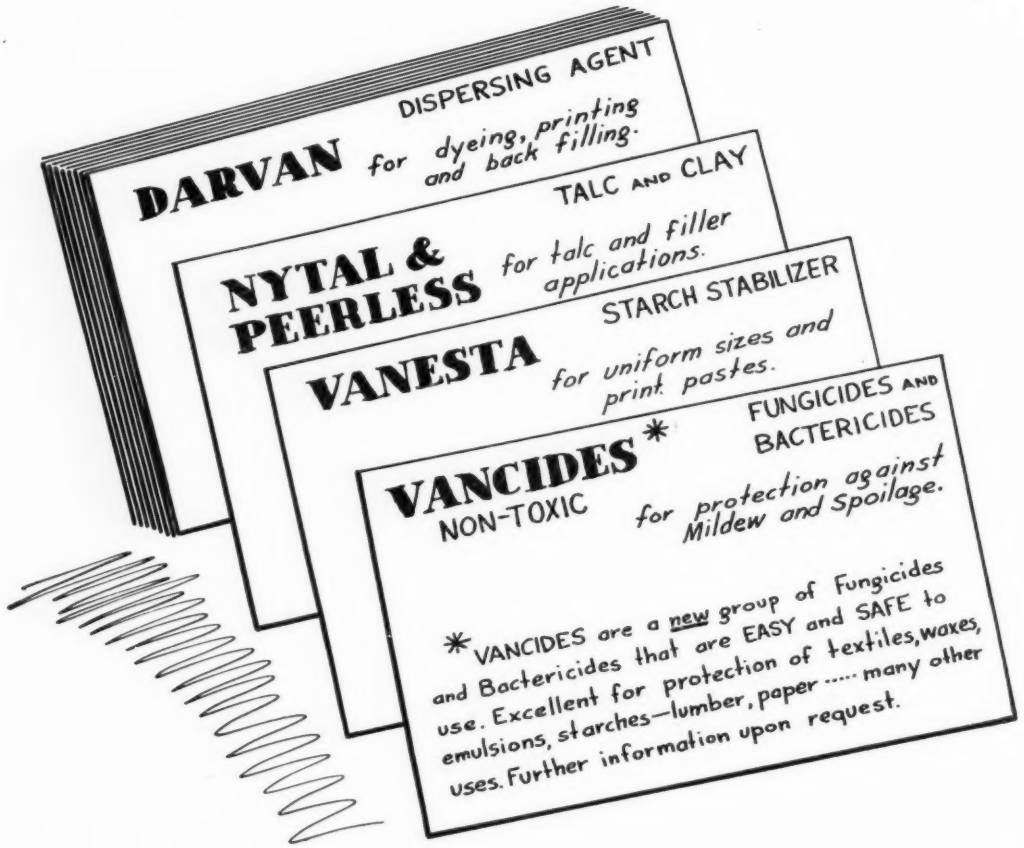
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*VANCIDES are a new group of Fungicides and Bactericides that are EASY and SAFE to use. Excellent for protection of textiles, waxes, emulsions, starches—lumber, paper ..... many other uses. Further information upon request.

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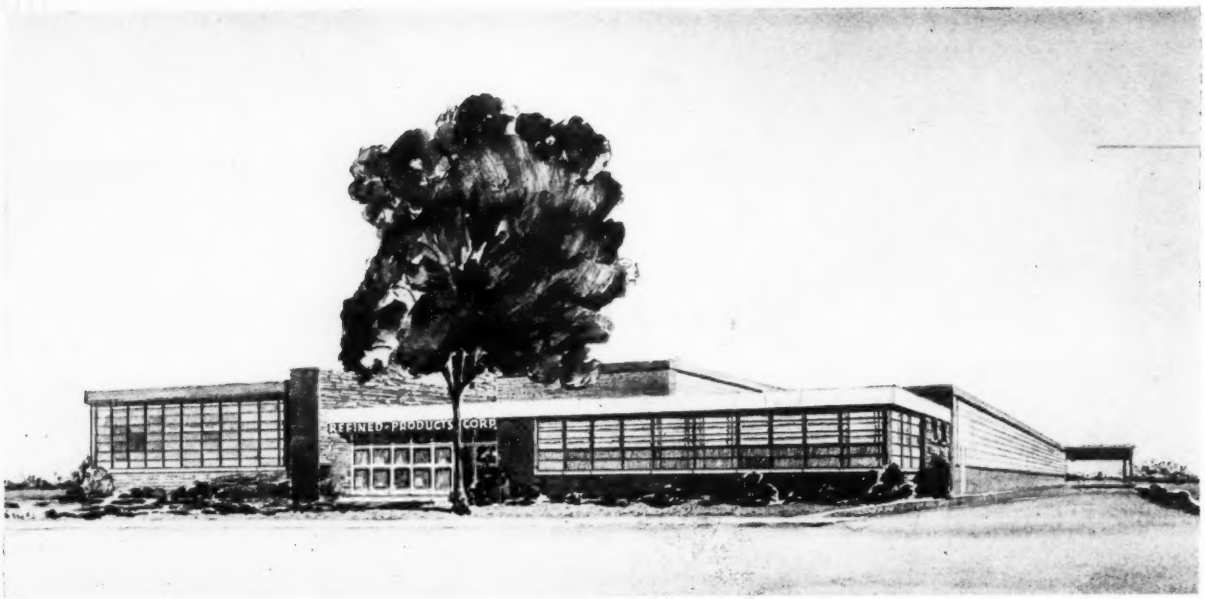
THE FUTURE OF THE TEXTILE CHEMICAL INDUSTRY DEMANDS INTENSIFIED RESEARCH AND FAITH TO EXPAND MANUFACTURING PLANT FACILITIES



In this, the new home of REFINED PRODUCTS CORPORATION, more than 100 chemical products will be produced for the textile chemical and allied industries • Increased laboratory facilities permit an intensified chemical research program under the supervision of recognized specialists in the field of textile chemicals and other related products.

The use of the most modern processing equipment permits an economy in production which is passed along to the consumer.

REPUTATION EARNED REPCO **THROUGH RESEARCH.**

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This new product imparts a soft, mellow hand to the fabric and has a minimum effect on the shade and light fastness of direct colors. Since it is of an alkaline nature, it can be used as a gas fading inhibitor for acetate colors.

REPCOLENE K-50-100%

REPCOLENE K-50-100% is a cocoanut oil fatty acid amine condensate. REPCOLENE K-50-100% finds wide application in the wet processing of textiles as a penetrating, scouring, leveling, dispersing and finishing agent and it can be used to replace 50% of soap in all operations.

REPCOLENE K-50

Can be used to replace from 10 to 50% of soap in all operations. No other water softeners are required and the use of REPCOLENE K-50 improves the penetration of the bath, prevents the precipitation of soap scum in hard water, and eliminates the re-deposition of soil on the fabric.

PERMA SETS

PERMA SET A—used where a firm hand is desired.
PERMA SET B—used to secure a full, soft hand.
PERMA SET A can be used in place of starch to give a permanent firm finish.
PERMA SET B can be used above with PERMA SET A in all applications where a softener and more flexible hand is desired.
PERMA SET B makes an excellent snag resistant finish for nylon, rayon and silk hosiery.

VELVAMINE K-90-SUPER

An improved softening and finishing agent containing no water or inert material. It is suitable for all types of fabrics and it imparts an odorless finish, which is resistant to washing and dry cleaning.

PERMA-TERGE

A highly efficient detergent for all types of spun rayons, rayon sheers, rayon crepes, pigments and bright yarns, crepes, taffetas, nylons, aralac and aralac mixtures, acetate and acetate blends.

**All products Reg. U. S. Pat. Off.*

REPCOL A-100

REPCOL A-100 is a viscous, light amber liquid which is readily soluble in water to give clear or slightly opalescent solutions having a pH of approximately 8.5. It is a modified fatty acid amine condensate and contains 100% of organic material. Being non-ionic in nature, it is stable in acid, neutral, and alkaline solution and resistant to calcium and magnesium salts usually found in hard water. REPCOL A-100 has excellent sudsing and dispersing properties at all temperatures.

REPCOL A-20

REPCOL A-20 is a solution of a fatty acid amine condensate which is stable in acid, neutral, and alkaline solution. Being non-ionic in nature, it is resistant to the calcium and magnesium salts usually found in hard water. REPCOL A-20 has excellent sudsing and dispersing properties at all temperatures.

PERMA KLEER-40

Used in peroxide bleaching, PERMA KLEER-40 has a stabilizing effect on the bath since it sequesters iron and other trace metals which catalyze the rapid release of oxygen. Used in the dye bath, PERMA KLEER-40 eliminates faulty dyeings caused by the presence of traces of iron, copper, calcium, magnesium and aluminum.

TERGEL-T

TERGEL T is a highly efficient detergent for use on all types of spun rayons, rayon sheers, rayon crepes, pigments and bright yarn, crepes, taffetas, nylon, wool-spun rayon mixtures, acetate and acetate blends. It has excellent wetting action and a retarding action on dyestuffs, which promotes uniformity and levelness in dyeing operations.

PERMA-PAR R

An improved cation active finish for all types of fabrics. It is odorless and when used in the last rinse it imparts a soft, spongy, mellow hand. It is resistant to washing and dry cleaning.

PERMA-PAR K

A two-purpose boil-off compound and softener which serves as a prefinish. It increases dye solubility and color value. Especially recommended for print goods and as a dyeing agent for hosiery.

VELVAMINE K-90

This improved product imparts an odorless finish which is resistant to washing and dry cleaning. A finishing and softening agent for all fabrics. Ideal when used in conjunction with starches, resins, dullers and other finishes where colloidal suspension is desired and acts as a plasticizer to such finishes on the cloth.

PERMALENE SOL

A penetrant and cleaner developed for use on all fabrics, especially tightly woven and high twist materials. Excellent for removing loom grease and graphite. Recommended for pad dyeing where it assures thorough uniform penetration. It is non-foaming at high speeds.

VELVAMINE GF

A blend of amines and softeners designed to protect acetate colors from gas or fumes fading. It resists removal by drycleaning and when used on mixed fabrics, has a minimum effect on the shade and light fastness of the direct colors. Velvamine GF produces a soft, full hand and does not affect the appearance of the treated fabrics.

REPCOLENE

A multi-purpose synthetic auxiliary. A neutral blend of fatty acid esters and aromatic sulphonates. It is a clear, free flowing, non-jelling liquid, an effective wetting and scouring agent which also acts as an excellent dye assistant and levelling agent. Extremely stable, its acidity is not affected by acids, alkalies, lime, or the salts usually found in hard water.

PERMA-CIDE

An outstanding mildew-proofing compound. Comprehensive, comparative tests, made by an independent testing laboratory, show this product to be highly fungistatic, bacteriostatic, bactericidal and fungicidal. The compound is non-toxic, non-irritating and is not a cutaneous sensitizer. All these properties are retained up to 30 washings.

General information sheets on all products are available.

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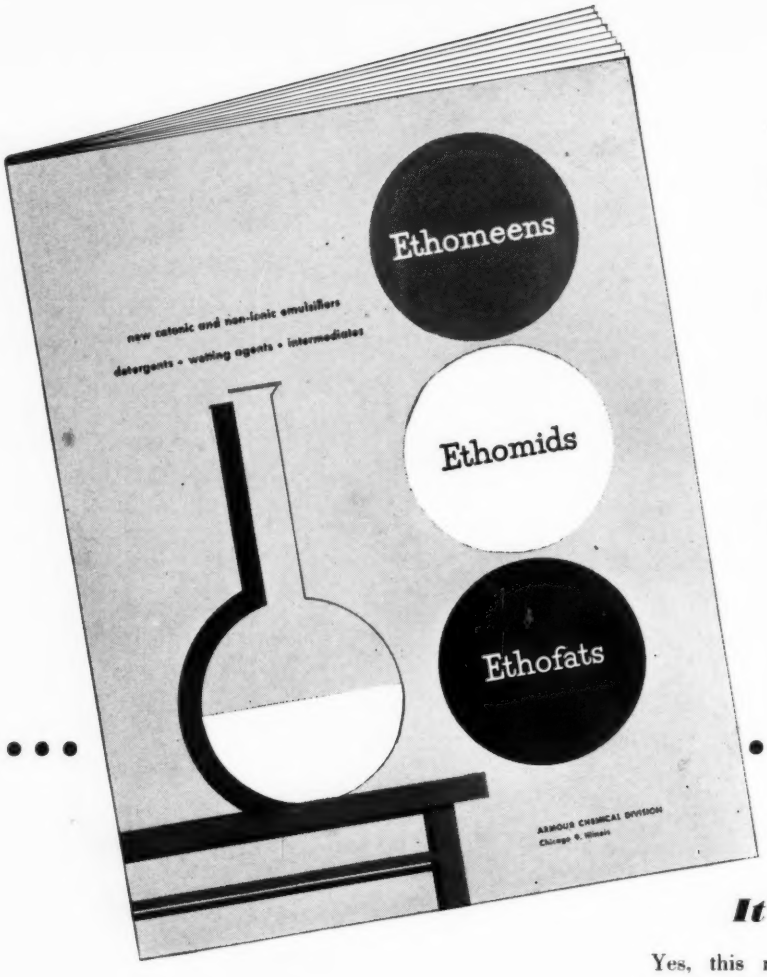


Prescribed reading for research chemists

It's available free!

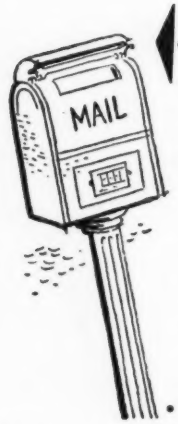
Yes, this new, informative 32-page technical book on the Ethomeens, Ethomids and Ethofats will aid many research chemists in their work. It describes the characteristics, properties and reactions of these ethylene oxide derivatives of fatty amines, fatty amides and fatty acids, plus their known and indicated uses. See the Table of Contents at left.

To date, the Etho-chemicals have proven themselves particularly valuable as emulsifiers, wetting agents; spreading agents for DDT oils; low-sudsing liquid or dry detergents for laundry, dishwashing, dairy and food plant equipment; shampoos, waterless hand creams, floor wax emulsions, soluble oils, water emulsion paints, etc. But this only skims the surface of their industrial possibilities—especially considering that some forty-four basic products (covering a wide range of solubilities) can be produced in commercial properties.

FREE samples of the Etho-chemicals are available upon request. The Armour Technical Service Department is ready to assist you with your problems.

Table of contents includes:

Surface Active Agents . . . Ethomeens vs. Ethomids vs. Ethofats . . . Explanation of Anionic, Non-Ionic, Cationic . . . Chemical Properties of Etho-Chemicals . . . Composition of Etho-Chemicals . . . Surface Tension Lowering . . . Wetting Action . . . Solubility Charts (showing solubility of Etho-Chemicals in Stoddard Solvent, Benzene, Carbon Tetrachloride, Dioxane, Acetone, Isopropanol, Water) . . . Surface Activity in Acid or Alkaline Solutions . . . Emulsification Coupling Agents . . . Industrial Applications of Etho-Chemicals (Formulas are suggested for many specific applications).



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AMACEL* COLORS
answer the demand for better color fastness
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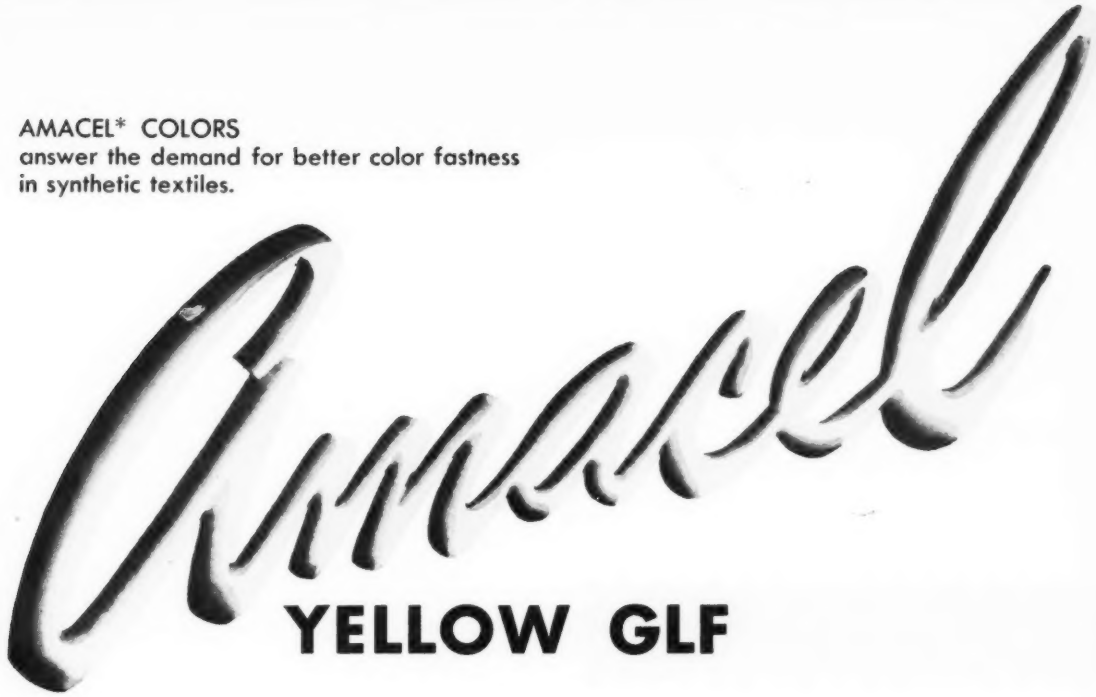

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YELLOW 4RLF

YELLOW CW

Latest additions to the popular range of AMACEL colors
for dyeing all types of Acetate. Finely dispersed dyestuffs offering excellent
fastness to light, gas fading, sublimation and decatizing.
Amacel Yellow CW, in particular, offers excellent wash fastness and is extremely well
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American Aniline was the first successful U.S. producer of dyes
designed especially for acetate fibres,
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A.A.P. technicians are always happy to be of service.

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CHOOSE YOUR OWN (denier / boarding system / hand) **COMBINATION**

. . . and be safe. Yes, safe because any combination that you select will respond to Fanco finishes. No matter the denier, the hand, the boarding system or special properties that you want for your stockings, Fanco finishes will give them to you accurately, continuously. They will seal in the beauty of fine knitting . . . add lasting loveliness, clear dullness and protection to every stitch. Ask your Fanco fieldman for a no-obligation, on-the-spot test.

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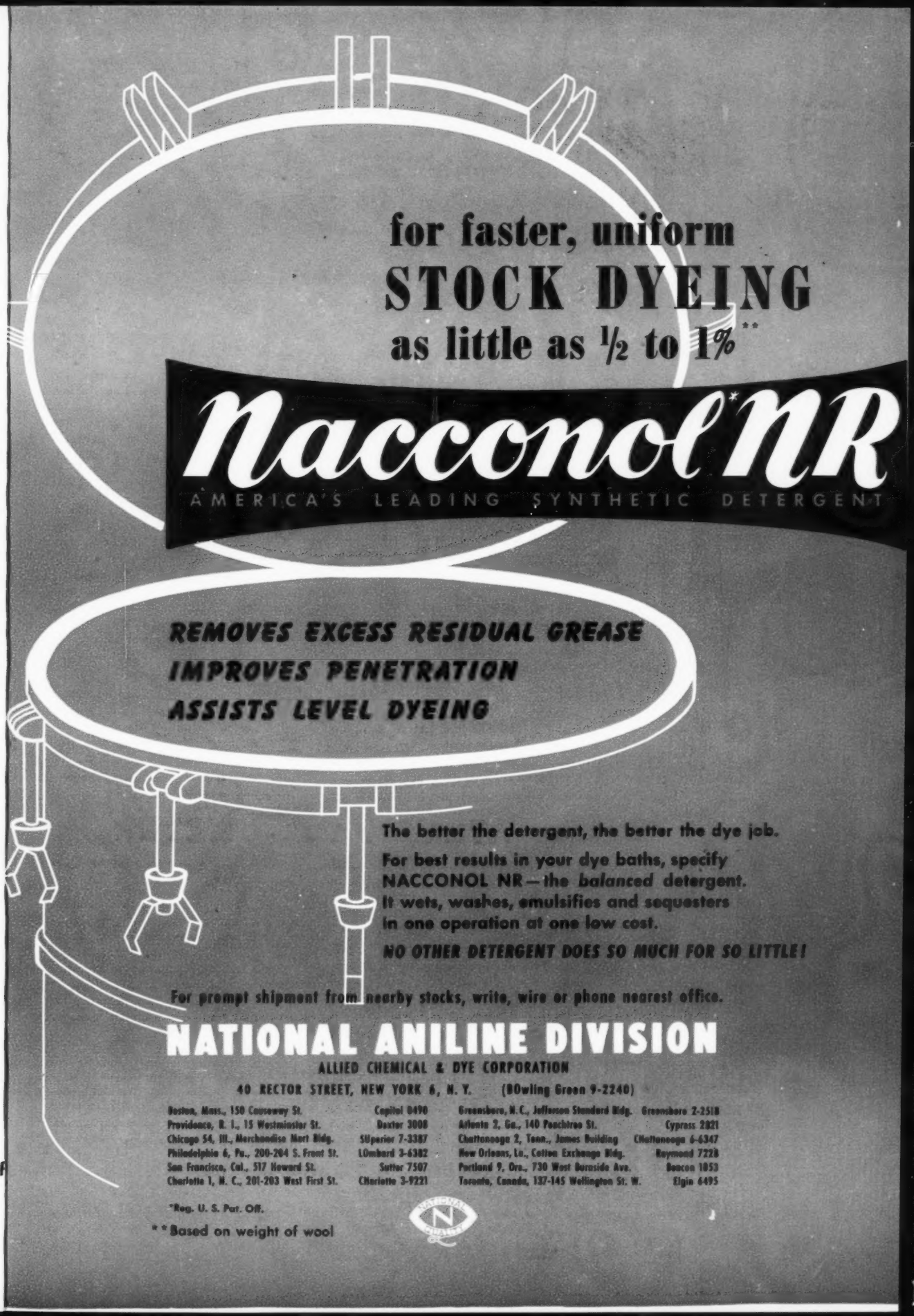
SOLVING FINISHING PROBLEMS SINCE 1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STOCK DYEING
as little as ½ to 1%**
Nacconol NR*
AMERICA'S LEADING SYNTHETIC DETERGENT
REMOVES EXCESS RESIDUAL GREASE
IMPROVES PENETRATION
ASSISTS LEVEL DYEING
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NO OTHER DETERGENT DOES SO MUCH FOR SO LITTLE!
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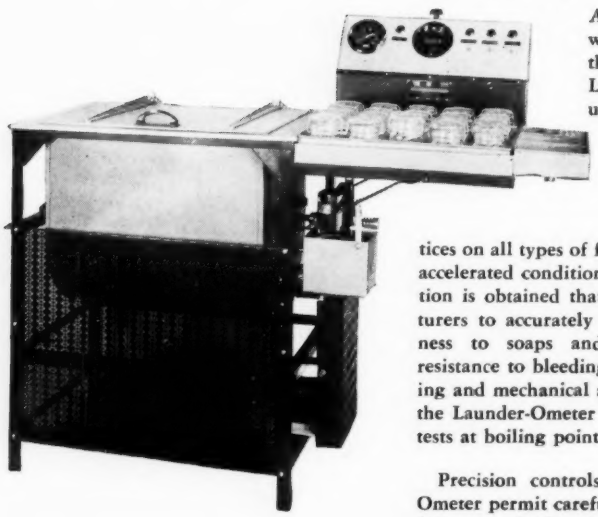
**Based on weight of wool

ATLAS-OMETERS

for more than 25 years the textile industry's standard machines for testing

★ color fastness
★ shrinkage
★ detergency
★ bleeding
★ resistance to mechanical action, etc.

ATLAS LAUNDER-OMETERS



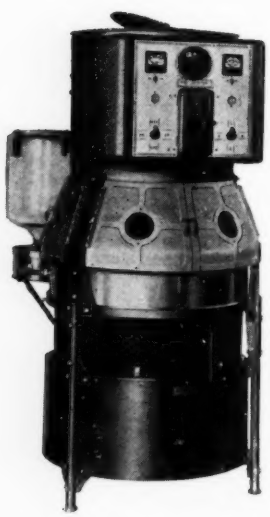
As the standard washing machine of the A.A.T.C.C., the Launder-Ometer is used to reproduce quickly the destructive effects of commercial laundering practices on all types of fabrics. Under these accelerated conditions, factual information is obtained that enables manufacturers to accurately predict color fastness to soaps and detergents, and resistance to bleeding, shrinking, washing and mechanical action. In addition, the Launder-Ometer is used for dyeing tests at boiling point.

Precision controls in the Launder-Ometer permit careful regulation of all factors, and identical reproduction of tests whenever desired. With its big capacity, the machine permits as many as 20 tests to be run simultaneously. The Atlas Pre-heating Loading Table—standard equipment on Launder-Ometers—makes it possible to start all tests at the same temperature, for greater accuracy. Mechanical action is provided by the introduction of stainless steel spheres or rubber balls into each container.

Located behind the Pre-heating Table, at the most convenient height is the modern control cabinet housing all switches, pilot lights, indicating and control instruments, and direct-reading dial type thermometer. Launder-Ometers are available for use with electricity, steam, gas, or both electricity and steam for heating the water bath. All machines are easily adapted to receive any type of container now under consideration by the A.A.T.C.C.

In the Launder-Ometer, all sheet metal parts coming into direct contact with water, including the test chamber and cover, sump pump, and preheating loading table are constructed of 18-8 stainless steel for permanent resistance to corrosion.

ATLAS FADE-OMETER



The Fade-Ometer brings under laboratory control the deteriorating action of sunlight on any material or type of finish. Used primarily to measure the light fastness of colors, the Fade-Ometer is also used to determine other photochemical changes caused by exposure to sunlight.

In making tests, samples in masked holders are rotated around an Atlas Carbon Arc—the closest approach to natural sunlight—at a fixed distance from the arc and at a constant speed in order to assure equal distribution of light to each sample. Upper and lower suspension rings keep samples in proper vertical alignment. Color fastness is measured in terms of Standard Fading Hours, using new calibration paper.

Operation of the Fade-Ometer is fully automatic. The simple, but complete control panel includes voltmeter, ammeter, running time meter, time switch, thermo-regulator, pilot lights and switches, which serve to keep all variable factors—time, temperature, humidity, and light—under accurate control.

The Fade-Ometer may safely be left in continuous operation overnight. It is furnished with water pan and test chamber constructed of 18-8 stainless steel, and with a wide variety of sample holders and exposure masks.

Manufacturers of the Twin Arc and the XIA Weather-Ometers

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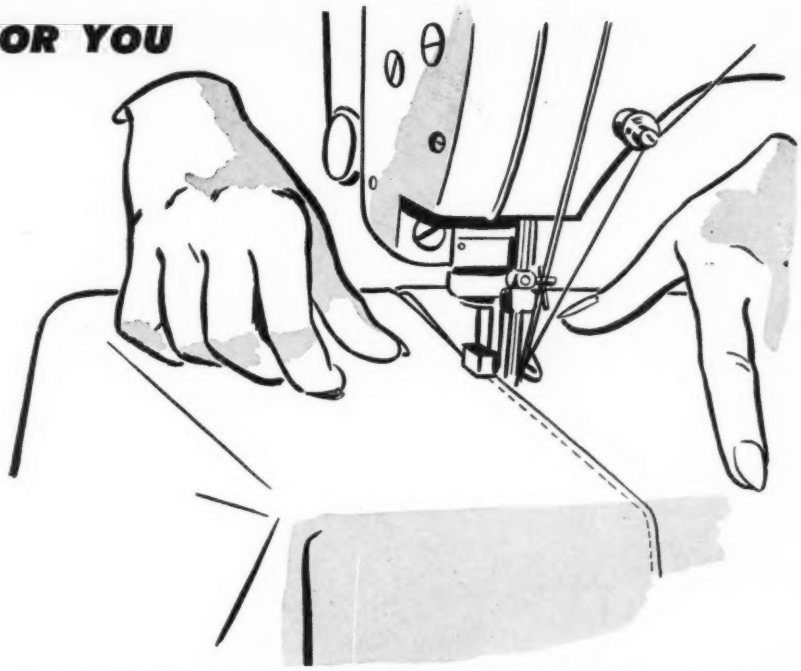

When fibers are protected from cutting and breaking with "AVITONE," fiber softener

Du Pont "Avitone" gets right down to work on the fiber, puts quality in your cottons and synthetics, gives you these important selling points:

"AVITONE" makes fabrics easier to work with

- the needle slides between fibers with little cutting or breaking of threads

"AVITONE" gives fabrics "feel appeal"

- softer, smoother "hand"

"AVITONE" keeps fabrics lovely—even in storage

- your whites stay white.

"Avitone" is stable to hard water. "Avitone" doesn't turn rancid or discolor on aging—its wetting action aids in shrinking processes.

See what "Avitone" can do for you!
For further information, check with Fine Chemicals Division, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware. Branch offices: Atlanta, Boston, Charlotte, Chicago, New York, Philadelphia, Providence, San Francisco.

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Polyvinyl acetate and copolymers

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Eliminate costly handling charges

No transfer losses from drums

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ATLANTIC PETROLEUM CHEMICALS

ULTRAWET 60L

This BRAND NEW liquid Ultrawet is crystal-clear even below 20° F

Atlantic Research has added a really amazing detergent to the ULTRAWET line of "tailor-made" surface-active agents. ULTRAWET 60L is a liquid organic alkyl aryl sulfonate; it is 60% active and 40% water. It has superior wetting, high-foaming, and excellent penetrating characteristics. In addition this newly developed ULTRAWET 60L remains *crystal-clear* even below 20 degrees Fahrenheit. These are properties not exhibited by any other commercial detergent for the money.

If you are selling a liquid detergent for household or institutional use, the solubility of ULTRAWET 60L is a real sales advantage. It is outstanding, too, for shampoos and other cosmetic applications. Its *extra* solubility offers much for textile and other industrial wet processes. It is available in drums and tank cars. ULTRAWET 60L is just one of many ULTRAWETS, each one of which is designed for specific applications and processes.

APPLICATIONS	ULTRAWETS					
Form:	30E Liquid	30DS Liquid	35K Liquid	60L Liquid	DS Flake	K Flake
Minimum % Solids:	30	30	35	60	85	85
Minimum % Active-Solids:	15	85	90	60		
EMULSION BREAKING	✓					
LIGHT-DUTY HOUSEHOLD DETERGENTS			✓			
PENETRANT	✓	✓				
INDUSTRIAL DETERGENTS					✓	✓
HEAVY-DUTY HOUSEHOLD DETERGENTS			✓			✓
EMULSIFIER					✓	✓
WETTING AGENT	✓	✓				
CHARGE STOCK FOR SPRAY AND DRUM DRYING			✓			
DRY MIXING WITH ALKALIS					✓	✓
LIQUID HOUSEHOLD DETERGENTS		✓				
COUPLING AND SOLUBILIZING	✓					

For samples, further information and quotations, communicate with

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Laurel synthetic detergents

LAUREL DIOTRENE T
—excellent penetrant and softener. Recommended as a wetting agent . . . may be used in finishing bath as softener.

SUPERTERGE L
—efficient penetrant and dispersant. Stable in lime or acids. Satisfactory in hard water. May be used for scouring cotton goods and as aid in level dyeing all types of colors. Has outstanding absorbent and rewetting qualities.

SUPERGEL RS
—good scour used alone or in combination with alkalies. Fine dispersant, fast penetrant as well. Recommended for scouring cotton and synthetic fibers.

Send today for trial order of these versatile Laurel Synthetic Detergents.

. . . speed your textile processing—cut costs—superior penetrants, scours, softeners

The speedy action of Laurel's new synthetic penetrants and detergents has won the approval of leading textile processors . . . their unusual penetrating and scouring qualities produce efficient results even in hard water.

OTHER LAUREL PROCESSING AIDS
Laurel Hydrosol • Laurel Hosiery Finishes
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textile
soaps, oils, finishes
LAUREL SOAP MANUFACTURING CO., Inc.
Wm. H. Bertolet's Sons
ESTABLISHED 1909

Warehouses:
PATERSON, N. J.
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KELTEX GIVES YOU...

exact,

unvarying printing paste viscosity

• For exact printing paste viscosity and perfect penetration try Keltex, the modern algin thickening agent.

Keltex insures true, even color values; gives you textile printing that's color-rich and color-sharp. It can be used with equally effective results in machine or screen printing on cotton, pure silk, wool or rayons. Gives excellent printing with direct, acetate, and acid dyes, or white discharge.

Rigidly processed to insure consistently uniform results, Keltex is entirely free of grit or other foreign matter. It is easy and economical to use; requires no cooking and only a light wash for removal.

For detailed information in terms of your particular requirements, write to the Technical Service Department of our nearest regional office.

KELTEX...A PRODUCT OF

KELCO COMPANY

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NEW YORK — 5

530 W. Sixth Street
LOS ANGELES — 14

Cable Address: KELCOALGIN — New York

Important advantages of Wyandotte Kreelon

guaranteed detergency
no objectionable odor
free-flowing flakes or powder
lighter color
maximum detergency

Since Kreelon* was introduced, Wyandotte engineers have been alert to ways of further developing this versatile detergent so as to have it meet industry's needs *exactly*. The result is today's Kreelon — an inexpensive synthetic detergent which is practically a *must* in modern cleaning compounds.

Kreelon is made under rigid manufacturing specifications and has 40-42% active organic content.

For information about properties and uses of Wyandotte Kreelon, write for the free booklet, "Kreelon."

*Reg. U. S. Pat. Off.

Wyandotte Chemicals Corporation
Wyandotte, Mich. • *Offices in Principal Cities*

SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

Wyandotte
REG. U. S. PAT. OFF.

Rapidogens® for printing

fast colors on cotton, rayon and linen

brilliant colors outstanding for clarity and depth.

extensive color range many important shades are exclusively GDC.

fastness excellent fastness to washing—very good fastness to light.

powders and solutions both forms are available.

application develop rapidly in acid ageing—many can be developed in neutral ageing.

versatility can be printed alongside Indanthrenes and Algosols.

economy combine quality with ease of application.

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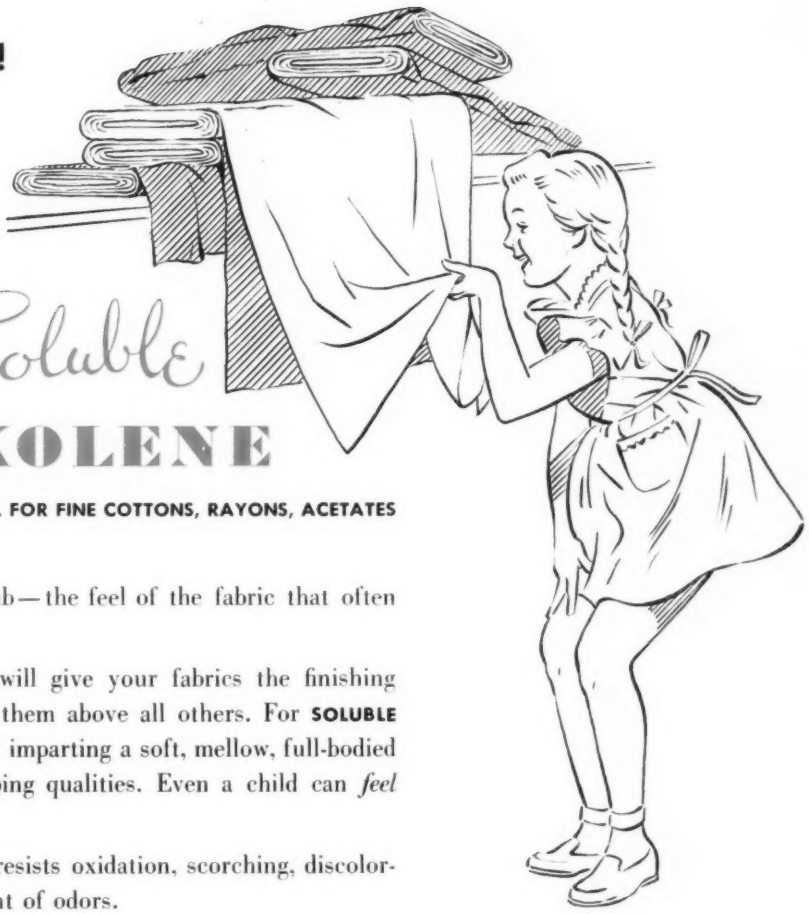
even a child can *feel* the difference!



Soluble

LUXOLENE

THE SUPERIOR FINISHING OIL FOR FINE COTTONS, RAYONS, ACETATES

It's the rule of the thumb—the feel of the fabric that often makes the sale!

DREW SOLUBLE LUXOLENE will give your fabrics the finishing touch that distinguishes them above all others. For **SOLUBLE LUXOLENE** has no equal in imparting a soft, mellow, full-bodied hand with exquisite draping qualities. Even a child can *feel* the difference.

DREW SOLUBLE LUXOLENE resists oxidation, scorching, discoloration and the development of odors.

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More than forty years' experience in the manufacture of Dyestuffs, Converted Starches, Waterproofing Agents, Sulphonated Oils, Finishing Compounds, Penetrators, Detergents, Bleaching Agents, Sizing Materials, and other Chemical Specialties for the Textile and Allied Trades...

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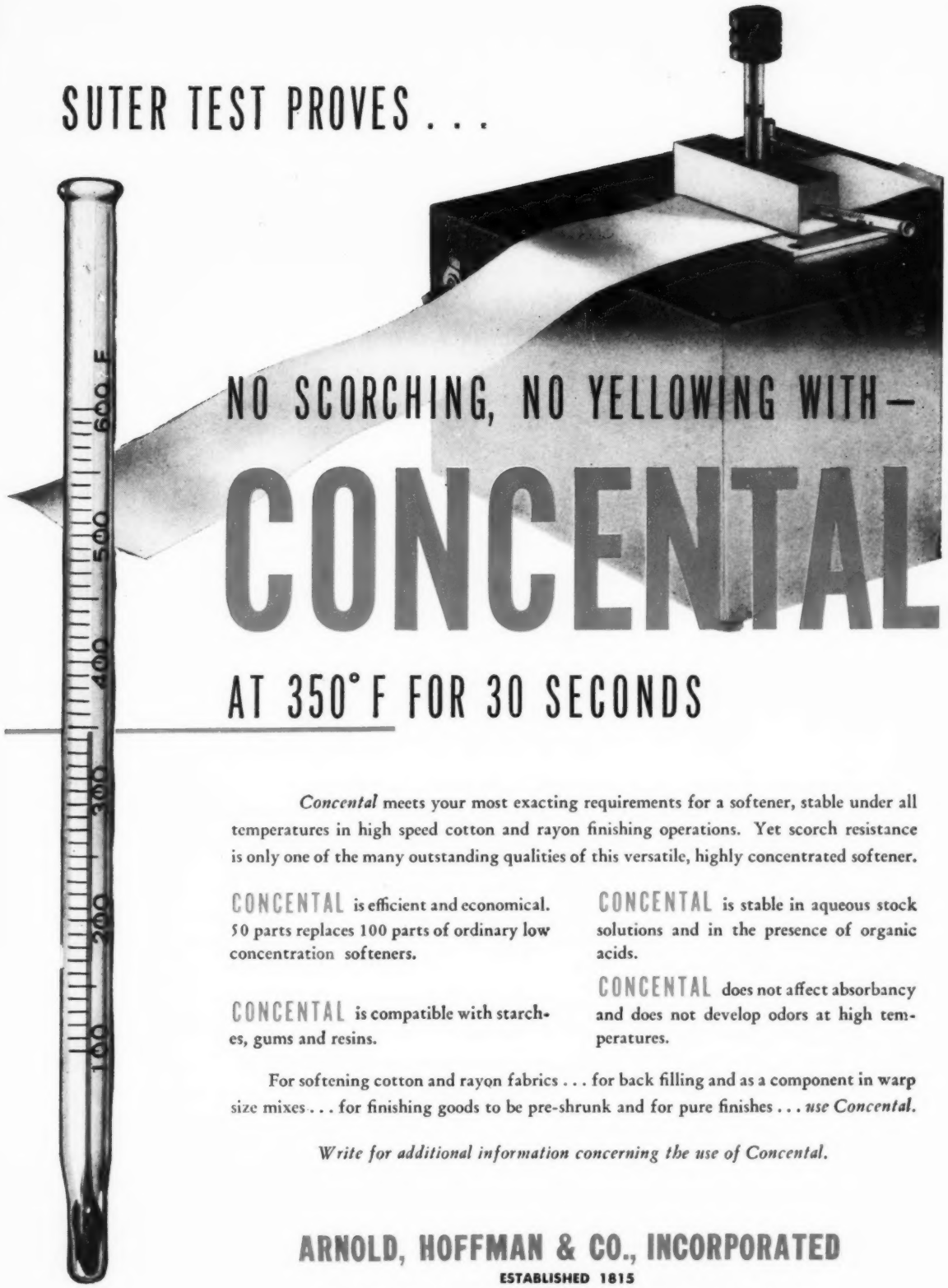
SUTER TEST PROVES . . .



NO SCORCHING, NO YELLOWING WITH—

CONCENTAL

AT 350° F FOR 30 SECONDS

Concental meets your most exacting requirements for a softener, stable under all temperatures in high speed cotton and rayon finishing operations. Yet scorch resistance is only one of the many outstanding qualities of this versatile, highly concentrated softener.

CONCENTAL is efficient and economical. 50 parts replaces 100 parts of ordinary low concentration softeners.

CONCENTAL is compatible with starches, gums and resins.

CONCENTAL is stable in aqueous stock solutions and in the presence of organic acids.

CONCENTAL does not affect absorbancy and does not develop odors at high temperatures.

For softening cotton and rayon fabrics . . . for back filling and as a component in warp size mixes . . . for finishing goods to be pre-shrunk and for pure finishes . . . *use Concental.*

Write for additional information concerning the use of Concental.

ARNOLD, HOFFMAN & CO., INCORPORATED

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PROVIDENCE, RHODE ISLAND

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Today's architects and builders have the means to protect their creations from electricity on the rampage . . .

. . . and today's WORSTED manufacturers have the means to protect the quality of their products from mischievous electricity—STATIC that plays havoc with desirable yarn production. For Nopco's new, specifically developed lubricant —NOPCO* 1656-R—provides an anti-static oil that assures better WORSTED production.

Fibres treated with Nopco 1656-R remain static free throughout carding, gilling, combing and drawing—in spite of today's speeded up processes. Result: "Wild" and broken ends are avoided, and even-running yarn is assured.

Nopco 1656-R successfully replaces any conventional lubricant you are now using. It is applied in the same manner . . . no changes in equipment or methods are needed. Whatever your production system—American, Bradford or French—this remarkable new oil can be used with great advantage to produce HIGH QUALITY WORSTED YARNS economically.

Ask your Nopco representative for full information about 1656-R — or write to us directly.

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NOPCO CHEMICAL COMPANY

Formerly National Oil Products Company

HARRISON, NEW JERSEY

Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

*Reg. U. S. Pat. Off.

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For Full-Bodied Softness...
Smooth Mellow Hand...
Rich Drape...

Here's an easy-to-handle, substantive synthetic softener in the form of a soft, cream-colored paste.

Syntho-Softener B...

assures a soft, full-bodied, velvety hand with maximum draping qualities for use on cotton, rayon, acetate, Bemberg, wool and nylon fabrics.

Write today for samples and a copy of the Syntho-Softener B technical data sheet.

Syntho Softener
ELIMINATES TROUBLE!

1. No effect on shade of dyed goods.
2. No yellowing of whites.
3. No rancidity on aging.
4. No discoloration on pressing.
5. No loss of light-fastness of dyed goods.

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Rayon Oils & Sizes	Conditioning Agents	Cationic Softeners
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based on research

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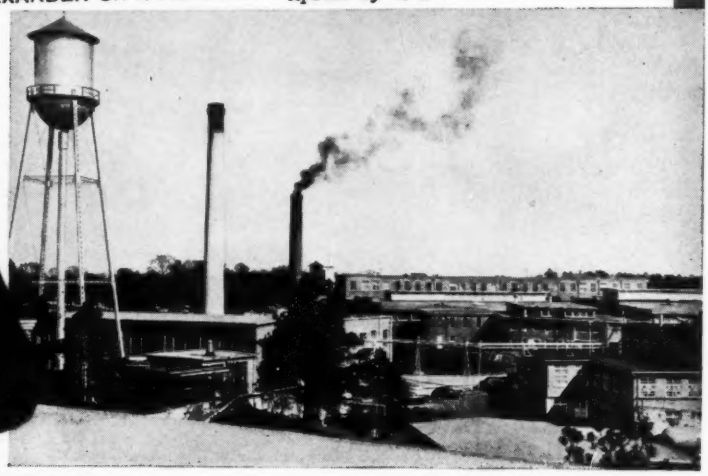
JOE W. RICHARDSON, MANAGER
BLEACHERY DIVISION

ALEXANDER CITY, ALABAMA April 2, 1949.

Joe W. Richardson, General Manager, Bleachery Division, Russell Manufacturing Co.



View of the Russell Manufacturing Co. mill at Alexander City, Ala.

"Greater Speed and Economy in Bleaching Cotton Piece Goods and Colored Yarn Fabrics . . . with our DU PONT CONTINUOUS PEROXIDE BLEACH SYSTEM"

SAYS JOE W. RICHARDSON, General Mgr. of Russell's Bleachery Division: "We are manufacturers, finishers, and job finishers of colored yarn dress fabrics, colored yarn broadcloths, and plain fabrics in the dress goods and broadcloth weights. We have been bleaching these fabrics on our Du Pont bleaching range and are obtaining regularly a more uniform bleach with greater speed and economies resulting from chemical savings on colored yarn fabrics, reduced labor costs and fewer seconds. We are successfully bleaching plain light-weight fabrics preparatory for dyeing with this system."

These words are typical of what executives are saying in the many leading bleacheries using Du Pont systems. And more and more mills are changing to Du Pont Continuous Peroxide Bleaching Systems . . . finding them easy to set up, operate and control. They're backed by the years of experience and "know how" of Du Pont Technical Service.

TO BLEACH MORE GOODS FASTER AT LOWER COST

There's a Du Pont System to meet your specific requirements. Du Pont technical service men will help you select equipment and start up your process. Just write E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT CONTINUOUS PEROXIDE BLEACHING

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

IT'S NEW

IT'S BETTER

IT'S VAN VLAANDEREN

The INSPECTALL

modern in every feature

Built to a precision and sturdiness not before available.

Exclusive design, one-station group control for easier, faster operation.

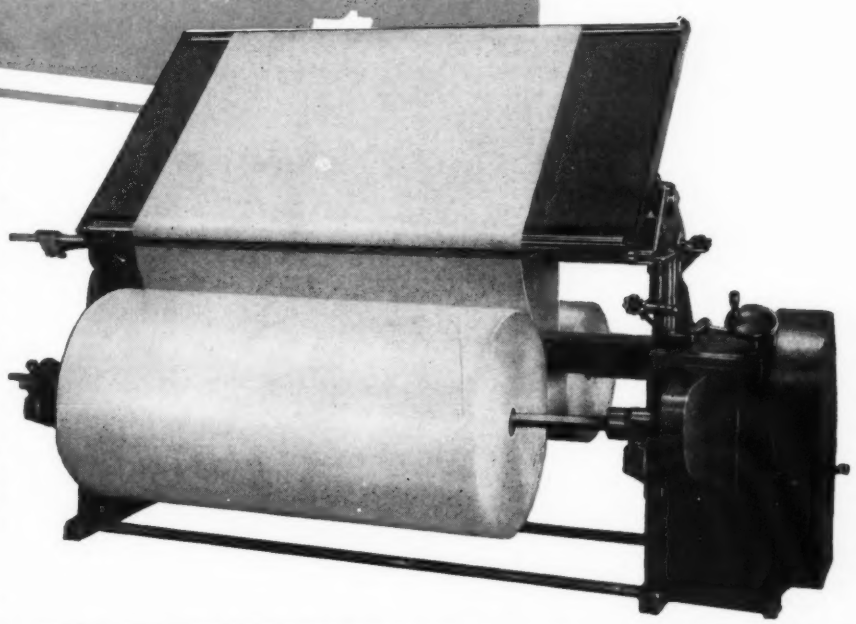
Wide-range, variable speed control at operator's finger tips.

Instantly reversible, one-motion clutch control, hand operated from any examining position.

Let-off brake controlled from front of machine.

Any fabric can be examined face or back because take-ups operate clockwise or counter-clockwise.

Center-bar quills ball-bearing mounted . . . opposite end equipped with new, Van Vlaanderen positive center-bar lock.



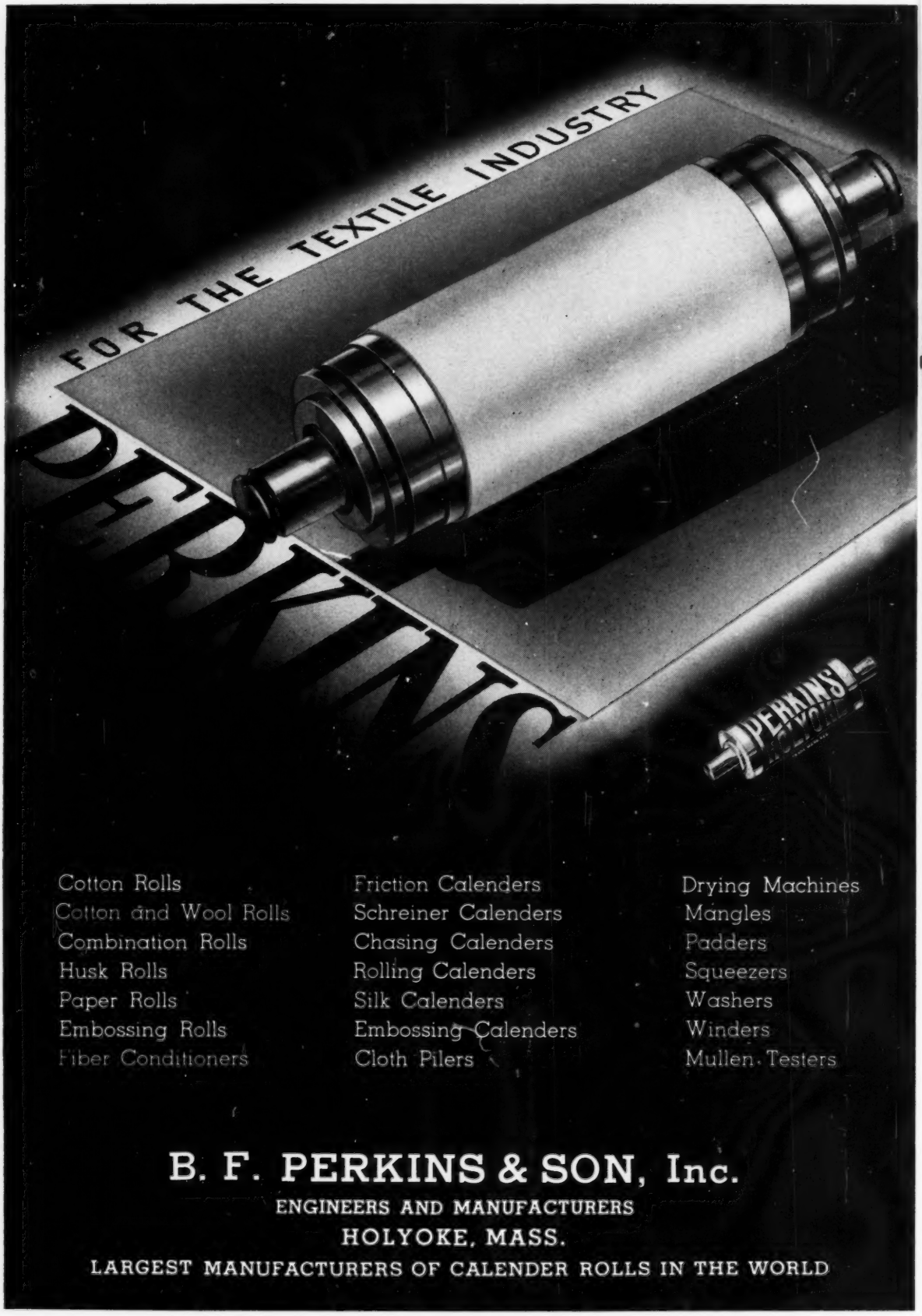
This new, superior examining machine will handle rolls of any fabric up to 36" in diameter. Examining board is 36" high in 60" or 72" widths. Special widths available. Machine equipped with precision clock measuring yards and eighths. Attachment available for running tube to tube or shell to tube. Ball bearings throughout...sealed for life. Completely enclosed drive. Oversize disk clutches. Hard chrome-plated guide rolls.

Ask us about this machine.

VAN VLAANDEREN MACHINE COMPANY

370 Straight Street • Paterson 3, New Jersey

World's largest manufacturer of machines for processing modern fabrics



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LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

at your service

So that users of Eastman Acetate Dyestuffs in New Jersey, Pennsylvania, New York, and New England may avail themselves of the full benefit of Eastman laboratory testing and technical services, Tennessee Eastman Corporation maintains a well equipped modern dyestuff laboratory at Lodi, New Jersey.

This central location is also the site of a warehouse in which is stocked at all times a full line of Eastman Acetate Dyestuffs for prompt deliveries to dyers in those areas.

Eastman Acetate Dyestuffs, obtainable in a wide variety of colors, are developed especially for the dyeing of synthetic fibers by scientists who have had long experience in the production of colors for cellulose products. These dyestuffs are manufactured under strict control in a modern plant to assure uniformly high-quality materials.

Tennessee Eastman Corporation (Subsidiary of Eastman Kodak Company)

Eastman Acetate Dyestuffs

• Eastman Acetate Dyestuffs are also sold through Tennessee Eastman Corporation in Kingsport, Tennessee, and in Canada through Clough Dyestuff Company Ltd., 33 St. Mathieu St., St. Laurent, Quebec.

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for wetting and dispersing purposes . . .

MAYPON SUPER K
and
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for
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Calco

for
economical,
clear navy blues
in cotton
printing

CALCONYL*

BLUE G POWDER

BLUE G SINGLE SOLUTION

For cotton printing where acid aging is available, specify CALCONYL BLUE G POWDER or CALCONYL BLUE G SINGLE SOLUTION. Either of these two forms of the same product will give clear, full navy blue shades with fairly good fastness to light and excellent fastness to washing, perspiration, dry cleaning and plissé.

Especially recommended for economical printing on dress goods, tablecloths, and handkerchiefs, both are satisfactory for use in patterns along with other colors of the CALCONYL line of stabilized azoics, Calco soluble vat dyes and CALCOTEX* resin-bonded pigments.

CALCONYL BLUE G POWDER and CALCONYL BLUE G SINGLE SOLUTION represent the latest additions to the Calco line of stabilized azoic dyes. Possessing the usual excellent stability of the other CALCONYL Solutions, CALCONYL BLUE G SINGLE SOLUTION will not precipitate or separate under normal storage conditions in the color shop. CALCONYL BLUE G POWDER *likewise* shows good resistance to deterioration under normal storage.

*Trade-mark

AMERICAN Cyanamid COMPANY
CALCO CHEMICAL DIVISION
DYESTUFF DEPARTMENT
BOUND BROOK, NEW JERSEY

Became exclusive Eastern representative for Reichhold Chemicals, Inc. — *1949*

Added application laboratory. — *1948*

Added control and research laboratories. Purchased Roxbury Chemical Co. — *1946*

Appointed Canadian representative. — *1945*

Added original testing laboratory. — *1943*

Opened Paterson, New Jersey office and warehouse. — *1942*

Moved to Centredale's famous Lister Mills and 150,000 sq. ft. of floor space. — *1941*

Had 9,000 sq. ft. of floor space in East Providence. — *1938*

Growing

Like many healthy 11 year olds, our growth has been steadily up . . . and out!

ATLANTIC

...Up...

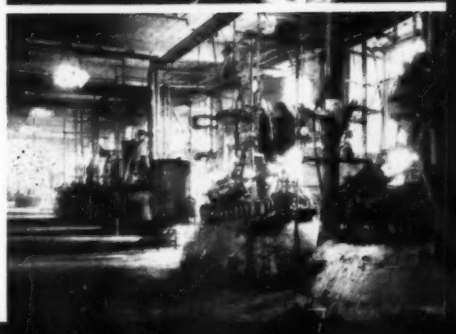
AND OUT!

Of course we have grown . . . and grown fast! But we have *never* outgrown our desire to help where we can . . . to give our best service in every instance . . . to strive continually to improve our products . . . to expand our facilities. Naturally, we have outgrown our original physical plant and many other sales and service "originals" . . . but this healthy growth has always resulted in better products—better services!

In Atco's new laboratories and throughout the 150,000 sq. ft. of plant area, skilled hands join to develop and produce chemicals that do their jobs economically and well.

New products of ATCO growth and research include:
The Famous FABREZ Line of Resins
ATCOPALS—New Line Of Non-Ionic Detergents
(Polyglycol ethers)

Remember:—wherever textile chemicals are used, on woolens, worsteds, silks or synthetics ATCO has the experts, ATCO has the laboratories, ATCO has the products!



ITCHEMICAL COMPANY

Exclusive Eastern Distributors of Reichhold FABREZ Synthetic Resins

Better Textile Processing Through Better Textile Chemicals

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MAIN PLANT • CENTREDALE • RHODE ISLAND

PROCTER & GAMBLE

PROXOL

MADE IN U.S.A.

TODAY'S BIGGEST "BARGAIN" IN WOOL OILS!

A "bargain", says the dictionary, is an advantageous transaction." And plenty of woolen processors can testify that the better results they have had with Proxol thoroughly justify calling Proxol "today's biggest bargain in wool oils."

Procter & Gamble
CINCINNATI, OHIO

Proxol's advantages show up in all of the many processing operations involved in converting raw wool fibers into finished fabrics.

Proxol emulsions are stable. Proxol increases carding and spinning efficiency. It's anti-static and non-corrosive...reduces fly and waste...won't harm aprons. Rovings are uniformly firm and well condensed.

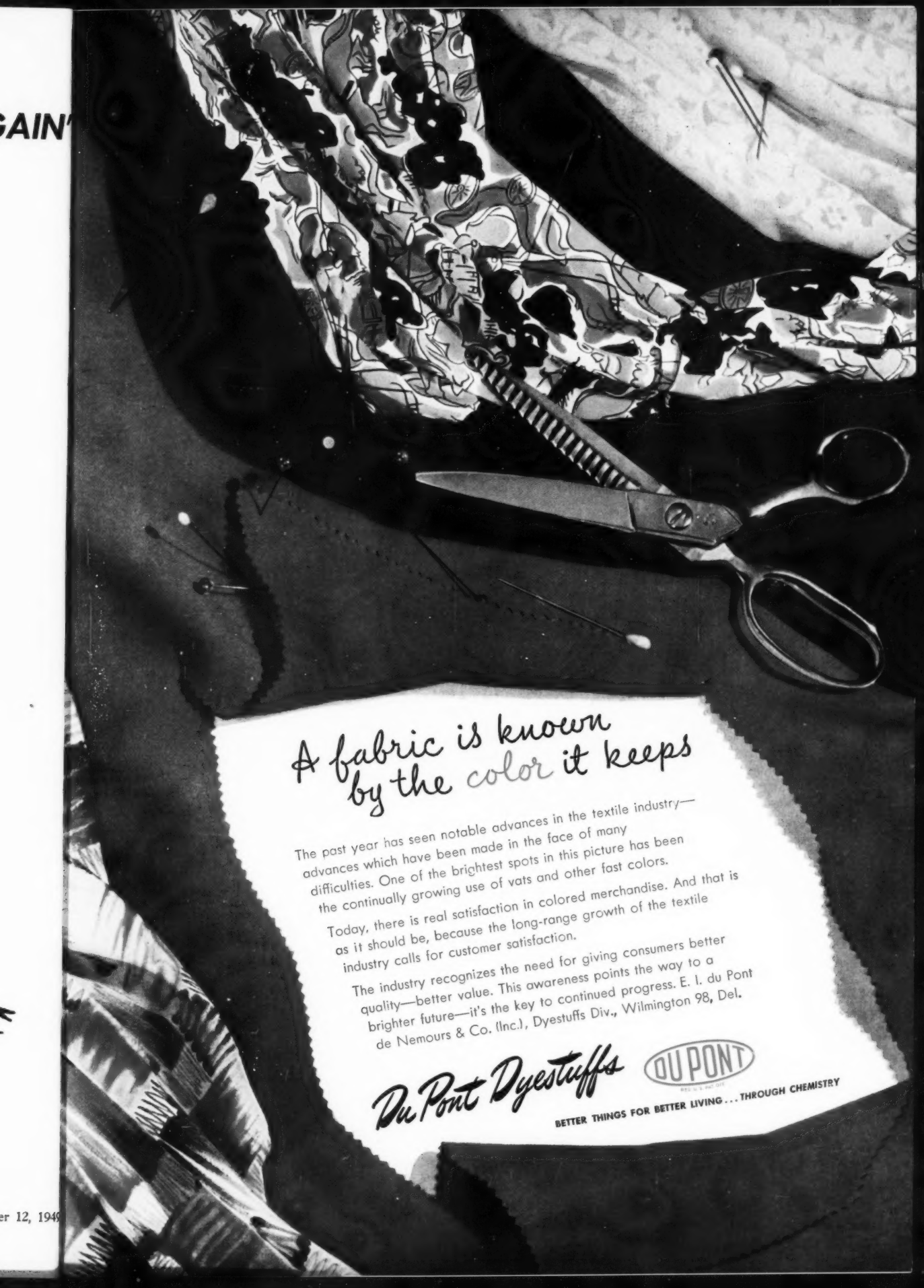
Proxol undergoes no change when it's on your raw wool, yarn or fabric. No matter how long it is stored, Proxol won't heat up or develop odor or discoloration. *And Proxol scours out easily!*

THR-R-R-IFTY! IT'S ALL WOOL N' A YAR-R-R-D WIDE!!

If you're interested in smooth, trouble-free production, it will pay you to try Proxol. You, too, will say it's today's biggest bargain in a truly efficient wool oil.

PROXOL—

made by the makers of Olate, America's #1 all-purpose textile soap.


A fabric is known by the color it keeps
The past year has seen notable advances in the textile industry—advances which have been made in the face of many difficulties. One of the brightest spots in this picture has been the continually growing use of vats and other fast colors.
Today, there is real satisfaction in colored merchandise. And that is as it should be, because the long-range growth of the textile industry calls for customer satisfaction.
The industry recognizes the need for giving consumers better quality—better value. This awareness points the way to a brighter future—it's the key to continued progress. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Div., Wilmington 98, Del.
Du Pont Dyestuffs
DU PONT
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DYES

DYESTUFF MANUFACTURERS

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Mayvat Brown AG
Mayvat Jade Green

Fast Color Salts
Fast Color Bases

Naphthols AS-TR and AS-G

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From these deep-water ports Mathieson is able to move economically large tonnages of heavy chemicals, new, improved fertilizers and special chemicals through low-cost shipping over inland waterways, along the coast or across the seven seas.

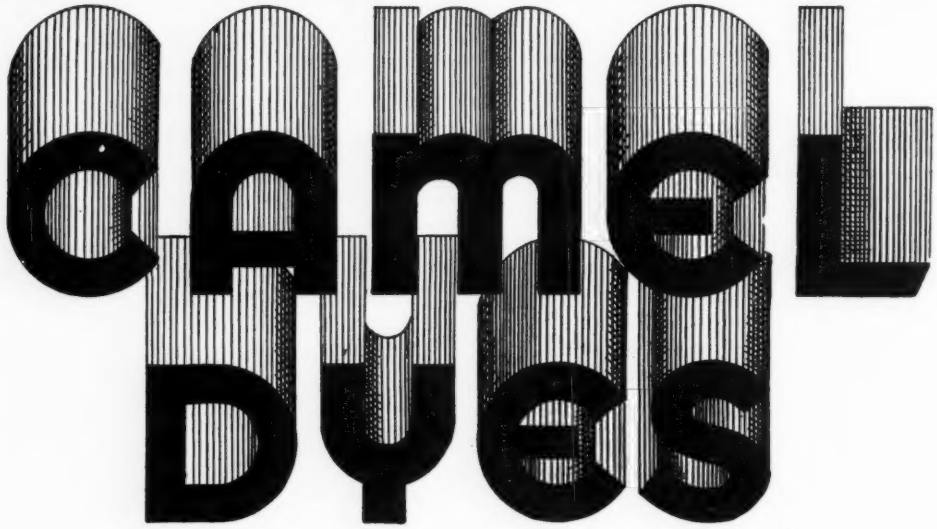
Reflected also in Mathieson chemicals are the customer benefits accruing from the efficient handling of incoming raw material at these tide-water ports.

Mathieson's constantly improving and expanding facilities for research, production and delivery are the result of one aim — to provide chemicals for the betterment of industry, agriculture and public health.

Mathieson
CHEMICALS

SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

Mathieson Chemical Corporation
MATHIESON BUILDING,
BALTIMORE 3, MARYLAND



THE CAMEL LINE OF

DEPENDABLE DYESTUFFS

has served the textile mills of America without interruption since

1876.

This broad experience assures

PROMPT • EFFICIENT • ECONOMICAL SERVICE

TO MEET ALL DYESTUFF REQUIREMENTS

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You can count on Santomerse No. 1 for the thorough penetration you need for level dyeing of yarns on packages and beams. It is economical. As little as from two to eight ounces per hundred pounds of yarn is needed for efficient penetration.

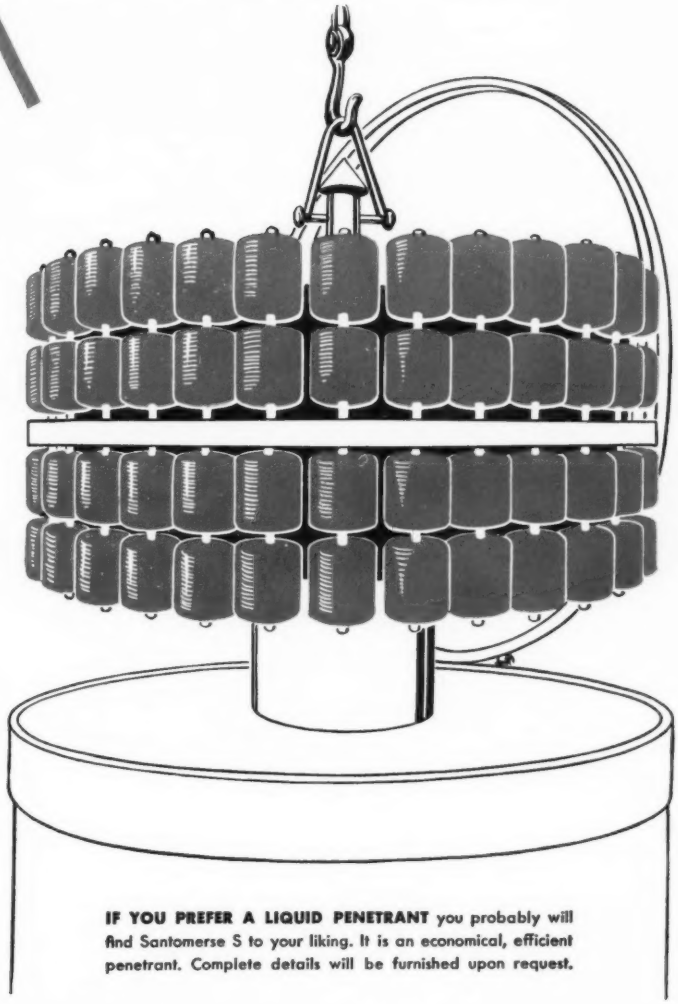
Santomerse No. 1 is effective in hard or soft, hot or cold water and in neutral, acid or alkaline solutions. It does not form insoluble curds that hamper your operations and lower the quality of your product.

Santomerse No. 1 is giving excellent service in the textile industry, not only in beam and package dyeing but wherever an efficient detergent, penetrant or dispersing agent is required.

Try Santomerse No. 1 in your beam and package dyeing. For complete details on this efficient, economical penetrant, mail the coupon, contact the nearest Monsanto Sales Office or write: MONSANTO CHEMICAL COMPANY, Desk G, Phosphate Division, 1779 South Second Street, St. Louis 4, Missouri.

SANTOMERSE No. 1

...efficient, economical penetrant for package and beam dyeing



IF YOU PREFER A LIQUID PENETRANT you probably will find Santomerse S to your liking. It is an economical, efficient penetrant. Complete details will be furnished upon request.

*Reg. U. S. Pat. Off.

MONSANTO CHEMICALS

MONSANTO CHEMICAL COMPANY
Desk G, Phosphate Division
1779-G South Second Street, St. Louis 4, Missouri

Please send items checked: Data and quotations on ___Santomerse No. 1; ___Santomerse S.

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Street_____

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MONSANTO DETERGENTS AND WETTING AGENTS

- Santomerse* No. 1
- Santomerse No. 3
- Santomerse No. 3 (Pasta)
- Santomerse 30X
- Santomerse D
- Santomerse S
- Sterox* CD
- Sterox SE
- Sterox SK
- Sterox 5
- Sterox 6

More readily soluble and more stable, because of its higher SO_3 content, than conventional soaps and sulfonated tallows, Stearo Glyceryl Sulfate N is also much more versatile. It will provide striking improvements in softening and plasticizing, and at the same time can be used for giving body and/or thickness over a wide range of effects. Its penetrating qualities are markedly superior.

Stearo Glyceryl Sulfate N shows much greater resistance to hard water and electrolytes than ordinary softeners, and exhibits exceptional resistance to rancidity and yellowing. It can be used with many other finishes for special hands of extensive variety.

Much more economical to use than ordinary sulfonated tallows, Stearo Glyceryl Sulfate N involves no changes in processes or equipment.

Onyx Technical Data Sheet 12-T carries the complete story of Stearo Glyceryl Sulfate N and its many textile applications. It will pay you to study this data.

ONYX OIL & CHEMICAL COMPANY

JERSEY CITY 2, N. J.

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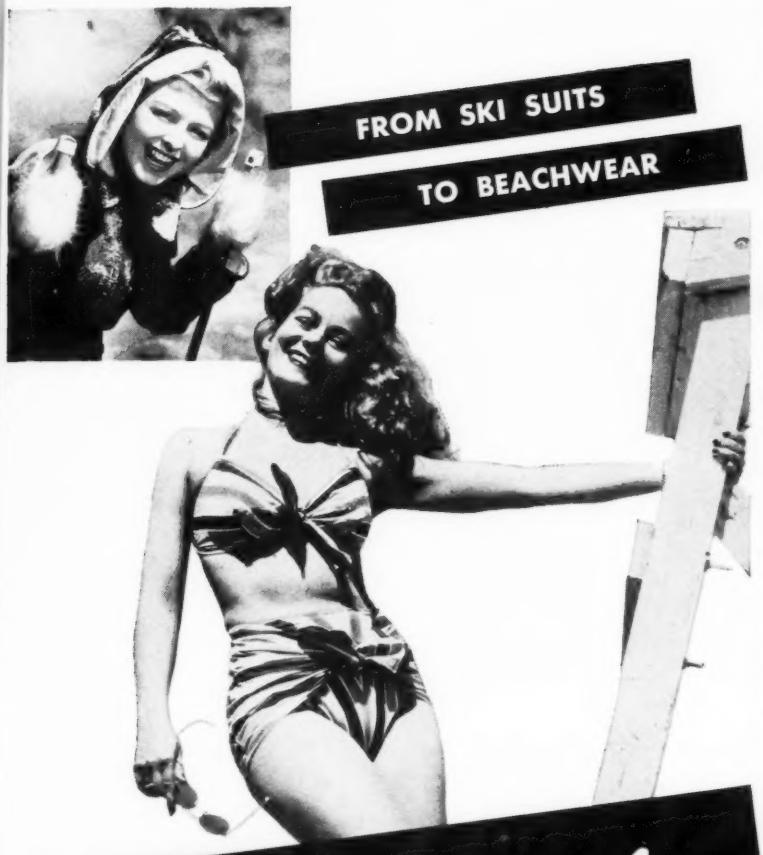

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As a hygroscopic agent and softener, glycerine is a standard ingredient of sizing compositions. As a penetrating agent, dispersant, and thickener, glycerine is used extensively in printing pastes. As a chemical intermediate, it's a favorite in the preparation of those alkyd resins which are helping to make possible today's wind- and water-resistant fabrics, anti-mold and rot-proof garments.

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TO INCREASE TEXTILE PRINTING SPEEDS and thereby reduce costs, a high concentration of solvent in the printing paste is recommended according to a report presented before a leading textile association. For nylon and acetate rayon printing with acetate colors, a glycerine-containing formula is claimed to be most efficient. (T-12)

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GLYCERINE VISCOSITIES TABLE AVAILABLE. The Research Laboratories of the Glycerine Producers' Association program of glycerine research, has prepared a table of viscosities of glycerine in aqueous solution from 0 to 100 per cent, at from 0 to 100 degrees C. To obtain your copy, check T-14 on the coupon below. (T-14)

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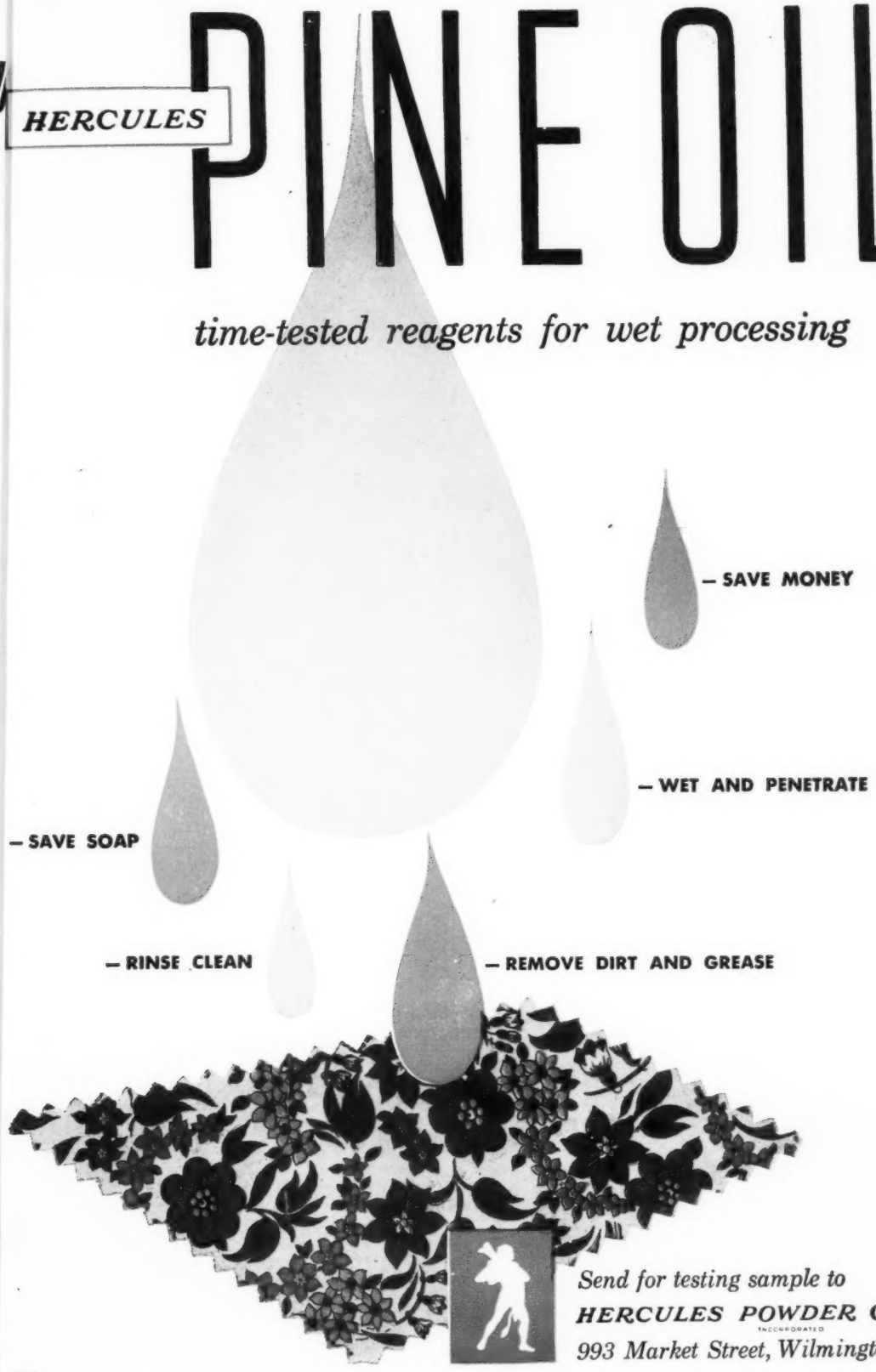

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NY9-1

The Boss' Son Learns The Business

with an assist from the Purchasing Agent

THE BOSS' SON waded right into his new job as assistant purchasing agent. He studied cost reports. He studied purchase orders. He studied piles of them.

"Maybe I'm seeing double," he said to the chief P.A., "but this Calgon* . . . it seems to crop up on purchasing orders for practically every department in the plant."

The P.A. said, "Yup . . . we sure use a lot of Calgon."

"SEEMS TO ME," the boss' son said, "we might look into the matter of saving some money by switching to a cheaper substitute."

The P.A. said, "OK, let's look into it."

"Well," his new assistant took a sheet from the pile in front of him, "Here's an order for Calgon for threshold water treatment."

"Uh-huh. Calgon stops corrosion. Calgon costs us a lot less than pipe and repair bills and rehandling goods for iron stains. It reduces the iron pick-up in the water. Maybe you have noticed how clean our water system is."

"But here's a Calgon order for the dyebath itself!"

"YOU'LL FIND lots of them. Calgon gives better dispersion, prevents scum of soap or dye. Colors come brighter with Calgon, too—and there's less chance of fading or crocking . . . "

"But," the boss' son said, "look at the cost . . . "

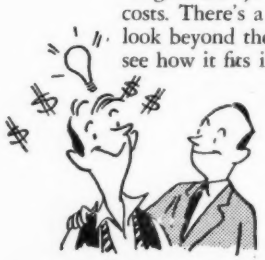
"Yeah," the P.A. agreed, "let's look at the cost. First we figure out what it costs to bleach and redye a single batch . . . "

"Wait a minute . . . how come we're bleaching and redyeing batches . . . "

"BECAUSE," the P.A. said, "If we change to a cheaper substitute, we lose efficiency and stains may develop. So we have to figure on the cost of possible redyeing."

"Oh," the boss' son took another look at the pile of requisitions on his desk, "I see. So Calgon crops up everywhere—in the kier boil . . . scour and rinse . . . sizing of gray goods . . . "

"Right. Our job isn't to buy more cheaply but to help cut costs. There's a whale of a difference. It means we have to look beyond the price of a product . . . like Calgon . . . and see how it fits into plant-wide operations."



"Otherwise," his new assistant said, "it might be extremely expensive."

"EXTREMELY."

**T. M. Reg. U. S. Pat. Off.*

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NEWS! Field reports are wildly enthusiastic — wherever AMBERTEX M is being used for printing Bemberg sheers and similar materials. It deposits a soft, pliable film on the cloth. Prints no longer embrittle, crack or rupture — as they do with ordinary thickeners.

AMBERTEX M is especially outstanding when used for white discharge, rapidogen and vat colors. There's no loss of color value. Instead, AMBERTEX M actually increases the color yield as much as 20%. It improves the quality of the color paste, produces smooth uniform blotches, and rinses readily in cold water.

AMBERTEX M is a grit-free, heavy-bodied printing thickener that enables textile printers to prepare vat pastes with tap water in one-half hour — instead of the 4 to 5 hours required by cook-up thickeners.

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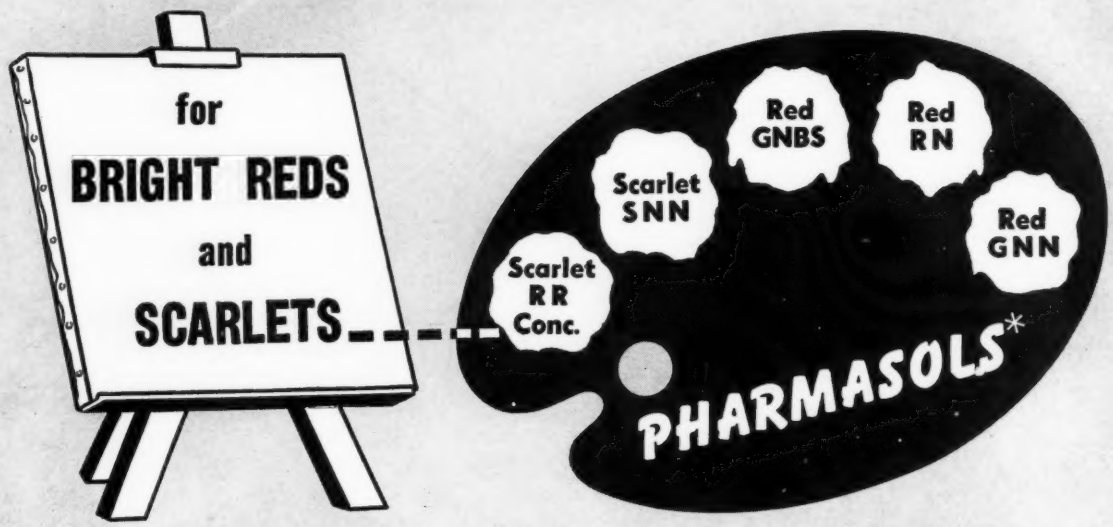

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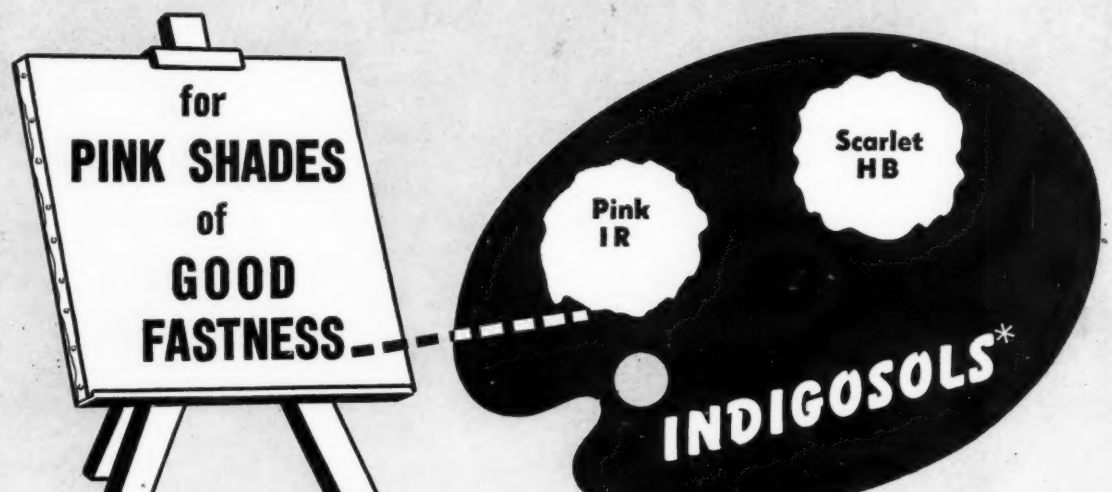

Here are two products in this soluble vat color group which are unexcelled for the production of pink shades of good fastness. They are unequalled, in the fast color group, for ease of application, clearness of tone and the solidity of color in any depth. They can be printed, padded, or dyed on any textile fibre.
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ANNUAL PROCESSING REVIEW NUMBER

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DECEMBER 12, 1949
VOLUME 38 NUMBER 25

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Annual Processing Review Number

AMERICAN

DYESTUFF REPORTER

VOLUME 38 DECEMBER 12, 1949 NUMBER 25

Alphabetical List of NEW PRODUCTS *Developed Since November, 1948*

DYESTUFFS AND PIGMENTS • TEXTILE CHEMICALS EQUIPMENT

WITH the cooperation of manufacturers of dyestuffs, textile chemicals, and wet processing and laboratory equipment, we have prepared the accompanying list of products which, it is understood, have been placed on the market or further developed since November, 1948. The list of products has been subdivided according to the classification mentioned and the individual products are listed in alphabetical order. The name of the manufacturer, in an abbreviated form, appears directly below the name of the product. In many cases the abbreviated name of the manufacturer will immediately indicate to the reader the full name of the company. However, appearing below, we have listed alphabetically the key name of the manufacturer together wtih the complete firm name and address.

We have tried to make this list as complete and accurate as possible but there may be some unintentional omissions or errors. If so, we shall be pleased to have such matters brought to our attention immediately. We have depended upon the manufacturers to supply us with a complete list of their new products together with information concerning them. The properties claimed for these products are those claimed by the manufacturers. The information which we publish is necessarily in a brief form inasmuch as lack of space prohibits the publication of complete details concerning any product. We hope, however, that the information as it appears is sufficiently comprehensive to give the reader a specific idea of the properties and intended use of the product.

KEY TO MANUFACTURERS' NAMES

ACME—Acme Color Company, 148-09 Northern Boulevard, Flushing, N. Y.

ADHESIVE—Adhesive Products Corporation, 1660 Boone Avenue, New York 60, N. Y.

ALCO—Alco Oil and Chemical Corp., Trenton Avenue and William Street, Philadelphia 34, Pa.

ALROSE—Alrose Chemical Co., 180 Mill Street, Cranston 5, R. I.

ALTHOUSE—Althouse Chemical Company, Inc., Reading, Pa.

AMERICAN ANILINE—American Aniline Products, Inc., 50 Union Square, New York 3, N. Y.

AMERICAN POLYMER—American Polymer Corporation, 101 Foster Street, Peabody, Mass.

ARKANSAS—Arkansas Company, Inc., P. O. Box 210, Newark 1, N. J.

ARNOLD, HOFFMAN—Arnold, Hoffman & Co., Inc., 55 Canal Street, Providence 1, R. I.

ATCO—Atlantic Chemical Co., Inc., 2072 Smith Street, Centredale 11, R. I.

ATLANTIC—Atlantic Chemical Corporation, 127 Prospect Street, Passaic, N. J.

ATLANTIC REFINING—The Atlantic Refining Company, 260 South Broad Street, Philadelphia 1, Pa.

ATLAS—Atlas Color and Chemical Co., 11-15 Wharf Street, Boston 10, Mass.

BICK—Bick & Co., Inc., Reading, Pa.

BIRCH—Birch Brothers, Inc., 32 Kent Street, Somerville, Mass.

BURKART-SCHIER—Burkart-Schier Chemical Co., Chattanooga, Tenn.

BUTTERWORTH—H. W. Butterworth & Sons Company, Philadelphia 25, Pa.

CALCO—Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J.

CARBIDE AND CARBON—Carbide and Carbon Chemicals Corporation, 30 E. 42nd St., New York 17, N. Y.

CAROLINA—The Carolina Aniline & Extract Company, Charlotte 1, N. C.

CELANESE—Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

CIBA—Ciba Company, Inc., Greenwich and Morton Streets, New York 14, N. Y.

COLGATE—Colgate-Palmolive-Peet Company, 105 Hudson Street, Jersey City 2, N. J.

COMMONWEALTH—Commonwealth Color & Chemical Co., 3240 Grace Avenue, New York 67, N. Y.

CONTINENTAL—Continental Chemical Co., 86 Lexington Avenue, Passaic, N. J.

CRUCIBLE—Crucible Steel Company of America, 405 Lexington Avenue, New York 17, N. Y.

DEXTER—Dexter Chemical Corp., 819 Edgewater Road, New York 59, N. Y.

DU PONT—E. I. du Pont de Nemours & Co., Inc., Organic Chemicals Dept., Wilmington 98, Del.

DOW CORNING—Dow Corning Corporation, Midland, Mich.

DREW—E. F. Drew & Co., Inc., 15 East 26th Street, New York 10, N. Y.

DURIRON—The Duriron Company, Inc., Dayton 1, O.

EASTMAN—Tennessee Eastman Corporation, Kingsport, Tenn.

FANCOURT—W. F. Fancourt Co., 516 South Delaware Avenue, Philadelphia 47, Pa.

GEIGY—Geigy Company, Inc., 89 Barclay Street, New York 8, N. Y.

GENERAL—General Dyestuff Corp., 435 Hudson Street, New York 14, N. Y.

GLASCO—Glasco Equipment Corp., 2 Wait Street, Paterson 4, N. J.

HART—Hart Products Corp., 1440 Broadway, New York 18, N. Y.

HILTON-DAVIS—The Hilton-Davis Chemical Co., 2235 Langdon Farm Road, Cincinnati 12, O.

HOUGHTON—E. F. Houghton & Co., 303 West Lehigh Avenue, Philadelphia 33, Pa.

INTERCHEMICAL — Interchemical Corporation, Textile Colors Division, Fair Lawn, N. J.

INTERNATIONAL SALT—International Salt Company, Inc., Scranton, Pa.

JERSEY—Jersey Manufacturing, Inc., 65 East 23rd Street, Paterson, N. J.

KALI—Kali Manufacturing Co., 427 Moyer Street, Philadelphia 25, Pa.

LAUREL—Laurel Soap Manufacturing Co., Inc., Tioga, Thompson and Almond Streets, Philadelphia 34, Pa.

LEEDS & NORTHRUP—Leeds & Northrup Company, 4901 Stenton Avenue, Philadelphia 44, Pa.

MAHER—Maher Color & Chemical Co., 355 West Ontario Street, Chicago 10, Ill.

OTTO B. MAY—Otto B. May, Inc., 198-214 Niagara Street, Newark 5, N. J.

MORNINGSTAR—Morningstar, Nicol, Inc., 630 West 51st Street, New York 19, N. Y.

NATIONAL—National Aniline Division, Allied Chemical & Dye Corp., 40 Rector Street, New York 6, N. Y.

NATIONAL STARCH—National Starch Products, Inc., 270 Madison Avenue, New York 16, N. Y.

NOPCO—Nopco Chemical Company, Inc., Harrison, N. J.

NYANZA—Nyanza Color & Chemical Co., Inc., 109 Worth Street, New York 13, N. Y.

ONYX—Onyx Oil & Chemical Co., Warren and Morris Streets, Jersey City 2, N. J.

PAISLEY—Paisley Products, Inc., 630 West 51st Street, New York 19, N. Y.

PAULDEN—Paulden Laboratories, Inc., Carlstadt, N. J.

PFIZER—Chas. Pfizer & Co., Inc., 630 Flushing Avenue, Brooklyn 6, N. Y.

PHARMA—Pharma Chemical Corporation, 175 Fifth Avenue, New York 10, N. Y.

PROCTER & GAMBLE—The Procter & Gamble Co., Cincinnati 17, Ohio.

QUAKER—Quaker Chemical Products Corp., Conshohocken, Pa.

REFINED—Refined Products Corporation, Lyndhurst, N. J.

RICHMOND—Richmond Oil, Soap & Chemical Co., Inc., 1041-43 Frankford Avenue, Philadelphia 25, Pa.

ROHM & HAAS—Rohm & Haas Company, Washington Square, Philadelphia 5, Pa.

ROYCE—Royce Chemical Co., Carlton Hill, N. J.

SANDOZ—Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N. Y.

STALEY—A. E. Staley Manufacturing Company, Decatur, Ill.

STANDARD BRANDS—Standard Brands, Special Products Division, 595 Madison Avenue, New York 22, N. Y.

STANDARD CHEMICAL—Standard Chemical Products, Inc., Hoboken, N. J.

STANDARD FABRICATORS—Standard Fabricators, Inc., 355 Walton Avenue, New York 51, N. Y.

SOLVAY—Solvay Sales Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.

SYNTHRON—Synthron, Inc., Ryan Avenue, Ashton, R. I.

TEX-CHEM—Tex-Chem Company, 21-01 Wagaraw Road, Fair Lawn, N. J.

WALLERSTEIN—Wallerstein, Inc., 180 Madison Avenue, New York 16, N. Y.

WARWICK—Warwick Chemical Company Division, Sun Chemical Corp., Wood River Junction, R. I.

JACQUES WOLF—Jacques Wolf & Co., Passaic, N. J.

Acetamine* Red BE

(Du Pont)

An economical, nonsubliming acetate color that produces bright red shades on both acetate and nylon. Dyeings made with this product are said to exhibit good light and washing fastness and on both materials possess very good resistance to crocking, hot moist pressing, sublimation and dry cleaning, and discharge well. It is recommended by the manufacturers for use alone or as a shading component for dress goods, draperies, linings, and many other uses where shade brilliance is desirable. It is said to have very good dispersion properties as well as excellent affinity and yields level, well penetrated dyeings. This product is also suitable as a printing color for acetate and nylon where the tendency to mark off is very slight in both light and heavy prints.

* Registered Trade Mark.

Acetamine* Rubine 3B

(Du Pont)

Especially recommended by the manufacturers for the production of bluish rubine shades that exhibit good brightness on either acetate or nylon. The blue shade of this direct dyeing acetate color recommends its use as a base for a wide range of light fast wines, clarets, bordeaux and maroons. It is said to possess very good fastness to both dry and wet crocking, hot moist pressing and has good resistance to washing at 105°F., dry cleaning and sublimation. It can be discharged to a slightly tinted white and produces speck-free prints by the usual printing methods. It is suitable for a variety of materials, such as dress goods, draperies, linings and many decorative fabrics that require good fastness to washing and dry cleaning. It is stated that it is easily dispersed, builds up slowly on the material and absorbs well at high temperatures. Effect threads, such as silk and wool, are dyed while cotton and rayon are considerably stained.

* Registered Trade Mark.

Acetamine* Yellow CG

(Du Pont)

A highly dispersible azo dye especially prepared for application to acetate rayon which yields attractive greenish-yellow shades on either bright or delustered stock. This dye is said to have very good fastness to gas fume fading, crocking, hot moist pressing and dry cleaning. In addition, it possesses fairly good fastness to light. It is recommended by the manufacturer for dyeing crepes, taffetas, satins and other filament fabrics and spun yarns for knitted wear. It is also suitable for use on certain nylon fabrics. Its increased fastness to light on this fiber makes it interesting for application to furniture coverings, draperies and similar materials. However, it should not be used on nylon articles that will be worn in contact with the body. It is stated that, because of the outstanding discharge properties of Acetamine Yellow CG, it is of special interest for use as a ground shade for white or colored discharge patterns. It is also suitable for printing, is unaffected by metals and can be applied in all conventional dyeing equipment. This direct dyeing acetate color is said to disperse readily and completely in the dyebath, and to transfer and exhaust well, producing clear, full bodied dyeings.

* Registered Trade Mark.

Ahcovat Brilliant Violet 2R Paste

(Arnold, Hoffman)

An anthraquinone vat dye which produces a rich full reddish violet shade on cotton and viscose rayon. It is said to be outstanding for its brilliance and excellent fastness properties. Ahcovat Brilliant Violet 2R Paste exhibits excellent working properties both as a dyeing and printing color and is widely used as a shading color because of its excellent charactristics. It yields somewhat redder shades on viscose rayon.

Ahcovat Brillant Violet 4R Paste

(Arnold, Hoffman)

An anthraquinone vat dye which produces a rich full violet shade on cotton and viscose rayon which is redder than that of the 2R. It is said to be outstanding for its brilliance and excellent fastness and its properties in general are similar to those of the 2R type.

Ahcovat Golden Yellow GK Double Paste

(Arnold, Hoffman)

An anthraquinone vat dye producing bright golden yellow shades on cotton and viscose rayon. It is especially suitable for printing applications. Because of its high tinctorial power it is very economical for use in the production of self shades or, in combination with other vat dyes, for the production of mixed shades of good fastness properties. It is stated that, due to its unique and excellent dispersion properties, it is readily incorporated into conventional printing pastes producing bright, speck free prints with high color yield. Ahcovat Golden Yellow GK Double Paste is particularly suitable for discharge printing on rayon.

Ahcovat Golden Yellow RK Double Paste

(Arnold, Hoffman)

An anthraquinone vat dye in highly dispersed paste form producing a bright, full golden yellow, redder in shade than that of the GK type. It is said to be an outstanding color for printing and dyeing because of its exceptional tinctorial strength and its superior fastness properties. It is particularly suitable for use in light and medium shades because of its good working properties along with its excellent fastness.

Ahcovat Jade Green B Extra Double Paste

(Arnold, Hoffman)

An anthraquinone vat dye producing the most brilliant range of green shades on cotton and rayon which are said to have unexcelled all around fastness. It is an exceptionally pure product in highly dispersed form suitable for all methods of dyeing and printing. It is recommended by the manufacturers for all types of cotton and viscose rayon materials that require great fastness to laundering and to exposure.

Ahcovat Jade Green B Extra Double Powder

(Arnold, Hoffman)

An exceptionally pure product in a highly dispersed form which is suitable for all methods of dyeing. Generally, it produces shades which are equivalent to those of the corresponding paste type.

Alizarine Levelling Blue 2R

(American Aniline)

An acid dyeing blue of brilliant tone whose extremely fine levelling quality makes it highly desirable for every type of woolen piece goods and yarn. This new product is said to offer excellent fastness to light, crocking, dry cleaning and sea water plus a high rating in resistance to perspiration, alkali and decatizing. Also suitable for the dyeing of nylon and for silk printing.

Alizarine Light Violet RCN

(Sandoz)

This new product is reported by the manufacturer to be closely related in dyeing and fastness properties to their Ali-

zarine Light Violet 2RC Pat. but the new type is considerably bluer and somewhat brighter than the former.

They further state that Alizarine Light Violet RCN resists the action of chrome and will therefore be found of interest for shading chrome colors on yarn, piece goods or worsted top. The product is said to have outstanding fastness to light, carbonizing, perspiration and water spotting, and very good fastness to washing, salt and fresh water spotting.

Alizarine Pure Blue BL
(Ciba)

Alizarine Pure Blue BL produces pure, bright shades said to be of good fastness to light, hot pressing and water. It is stated that the dyeings have excellent fastness to carbonizing and good to very good fastness to other subsequent wet processing.

Alizarine Pure Blue BL is of special interest for the production of clear blues and delicate pastel shades, for instance, on baby wool yarns, ladies' dress goods and carpet yarns.

Alizarine Pure Blue BL has good solubility and color yield is not adversely affected by hard water. Acetate, viscose and cotton effects are reserved.

Alizarine Sky Blue R
(American Aniline)

Another new achievement in a level dyeing acid blue of a brilliance surpassing even that of Alizarine Levelling Blue 2R. This item is applicable to fine grades of woolen pieces and yarns from the normal Glauber's salt and sulfuric acid bath. The color is also suitable for use by the top chroming procedure, offering the same good fastness properties but with somewhat reduced shade brightness.

Amacel* Blue GLF
(American Aniline)

A product in high state of dispersion for maximum efficiency in the dyeing of acetate yarns and fabrics. Light fastness is said to be good, resistance to gas fading very good. This recent addition does not draw too rapidly, therefore contributing to control of shade and levelling.

* Reg. U. S. Pat. Office.

Amacel* Cerise B Extra
(American Aniline)

It is claimed that this highly-dispersed item is productive of about the brightest and bluest shades of pink that can be obtained with acetate colors. Particularly recommended by the manufacturers to the lingerie trade. Of much interest for brilliant American Beauty shades. Said to possess good to very good all around fastness. Recommended for printing.

* Reg. U. S. Pat. Office.

Amacel* Yellow CW
(American Aniline)

Finely dispersed and suitable for use on all types of acetate fiber as well as nylon is this new medium toned yellow. It is stated that wash fastness is excellent with practically no staining of adjacent white acetate materials, that gas fade resistance is very good and that it is very suitable for use in combination shades where a minimum of selvage shading is required.

* Reg. U. S. Pat. Office.

Amacel* Yellow GLF
(American Aniline)

A very finely dispersed dyestuff for use on acetate rayon, also for nylon. As applied to acetate, the shade produced is of medium greenish tone while on nylon a somewhat redder shade is obtained. Fastness to light, gas fading and sublimation is said to be excellent. Effect threads of viscose and cotton are left clean.

* Reg. U. S. Pat. Office.

Amacel* Yellow 4RLF
(American Aniline)

This companion color to Amacel Yellow GLF is likewise very highly dispersed and suitable for acetate and nylon. This product also is said to possess excellent fastness to light, gas fading, sublimation and decatizing, as well as very good resistance to washing and perspiration. When diazotized and developed, this redder yellow retains its shade very well.

* Reg. U. S. Pat. Office.

Amacid* Milling Green 3G
(American Aniline)

A clean, full-toned green of unusual brightness highly suited to application on all grades of worsted yarns and piece goods. Recommended by the manufacturers for its excellence in levelling quality and very good fastness to steaming, perspiration and crocking. May be dyed neutral or from a Glauber's salt and acetic acid bath. The color is well adapted to screen printing of silk.

* Reg. U. S. Pat. Office.

Amanil* Napthol AS-MX
(American Aniline)

This latest addition to the Amanil Napthol group of fast azoic colors, as coupled with suitable Amanil fast color salts and diazotized bases, offers a shade range from bright orange and scarlets on through to the bluer reds and bordeauxs as well as deep blues and blacks. Application may be made to cotton and viscose piece goods in the padding machine with jig coupling. Average coupling is said to possess very good fastness to light, washing, chlorine and hot pressing. Maximum crock fastness is effected with a Stabilon hot wash before soaping.

* Reg. U. S. Pat. Office.

Amanil* Rayon Black JG
(American Aniline)

A new direct dyeing black especially designed for and highly suited to the dyeing of rayon in the jig. Outstanding features are said to be its rapid pick-up quality, very good fastness to light, hot pressing and crocking, and good perspiration fastness.

* Reg. U. S. Pat. Office.

Amanthrene* Blue Green FFB Double Paste
(American Aniline)

Of good tinctorial value is this pleasing shade of vat blue green and highly dispersed, making it suitable for application to every textile form of cotton and viscose. Said to be an excellent dyeing product and especially recommended for printing. It is stated that because of its very good resistance to light, washing, chlorine and boiling, the product is well adapted to use on sports wear, draperies and upholstery materials.

* Reg. U. S. Pat. Office.

Amanthrene* Flavone GC Double Powder
Amanthrene* Flavone GC Double Paste
(American Aniline)

Extremely clear and bright lemon yellows are produced on cotton or viscose with these latest additions to the Amanthrene Vat line of fast colors. Bright kelly greens are possible when combined with a blue or a green of similar brilliance, such as Amanthrene Brilliant Green J. The Double Powder is recommended for dyeing while the Double Paste may be used for both printing and dyeing. This brilliant yellow is said to offer very good fastness to washing, soda boil, chlorine, peroxide bleach, mercerizing and vulcanizing.

* Reg. U. S. Pat. Office.

Amanthrene* Scarlet 2BP Paste
(American Aniline)

A bright, lively vat scarlet of blue tone and especially prepared for the printing of cotton piece goods as well as viscose. Like its yellower companion color, Amanthrene Scarlet G, this 2BP item may be stock vatted and dyed, and is said to offer high resistance to the destructive action of washing, light, chlorine, boiling and peroxide bleach.

* Reg. U. S. Pat. Office.

Atlantic Azurine G Conc.
(Atlantic)

A direct dyestuff (C.I. 502) used extensively for the production of navys in combination with dianisidine on acetate-rayon mixtures. It is stated that this product withstands the effect of diazotization and development with BON.

Atlantic Direct Blue BBW
(Atlantic)

A direct blue said to be of high tinctorial value and excellent solubility. It is stated that this dyestuff is suitable as an economical self shade or as a base for navys, on both cotton and rayon. It is recommended by the manufacturers for effect-dyeing since it leaves wool, silk, acetate, and nylon an unstained white. Atlantic Direct Blue BBW discharges to white and is said to have good fastness to acid and alkali.

Atlantic Direct Sky Blue 6B
(Atlantic)

A direct dyestuff (C.I. 518) used to produce bright blues and greens on cotton and rayon. Acetate effects are unstained, and the color discharges to white.

Aridye Black F2K
Aridye LDY
(Interchemical)

Two new additions to the line of Aridye Pigment Colors for textile printing. Aridye Red LDY produces yellowish red shades said to be of exceptional fastness to light. Even in pastel shades, it has a Fade-Ometer rating of 100 hours. Aridye Red LDY can be blended with the bluer Aridye Red LDB to produce almost any shade of red or pink. It is stated that, in addition to its superior light-fastness, this new color has excellent fastness to washing, chlorine, drycleaning, perspiration, hot pressing, plisséing, and Trubenizing.

Aridye Black F2K produces a bloomy jet black shade. It is said to provide sharp outlines, excellent pegs, to have superior running properties, and to have better money value than older pigment blacks. It is stated that it has excellent fastness to light, washing, drycleaning, plisseing, and Trubenizing.

Artisil Direct Blue GFL
(Sandoz)

A new bright shade of blue for acetate claimed by the manufacturer to be the first acetate blue to have excellent fastness to light as well as good resistance to gas fumes. It is also reported to be of the "cold" dyeing type in that it gives good exhaustion at temperatures of 160°F. with excellent level dyeing in both beck and jig. Likewise, it is stated that it is very fast to sublimation and undergoes practically no change of shade by perspiration.

Bixamine* Black JB 200%
(Bick)

A direct black which produces redder shades on cotton and rayon than Bixamine Black GX. It stains acetate heavily which is advantageous when dyeing a solid black shade on mixtures of acetate and rayon.

It is recommended by the manufacturers only for dyeing full shades as the dye is not sufficiently fast to light for shades of gray. Aftertreatment with formaldehyde considerably increases the wash fastness.

* Registered Trade Mark.

Bixamine* Diazo Blue 3RL
(Bick)

A new developed dye producing, with beta naphthol, reddish-blue shades said to possess excellent fastness to water, sea water, perspiration and organic acids.

The fastness to alkalies, light and washing is said to be good.

Bixamine Diazo Blue 3RL is recommended by the manufacturers for the production of Navy Blues on cotton and rayon in combination with Bixamine Diazo Blue BRN and Bixamine Diazo Black OB.

Excellent hydrosulfite dischargeability commends Bixamine Diazo Blue 3RL for the printing trade.

* Registered Trade Mark.

Bixamine* Diazo Orange 2G 200%
(Bick)

A developed dye yielding, when developed with beta naphthol, bright orange shades said to possess good fastness properties. It is recommended by the manufacturers for application to raw stock, yarn and piece goods in all types of machines.

In combination with Bixamine Diazo Blue BRN desirable shades of Brown may be produced which discharge to a white with a neutral discharge printing paste.

* Registered Trade Mark.

Bixamine* Diazo Orange RG
(Bick)

When developed with beta naphthol it produces bright shades of orange on cotton and rayon said to be of generally good fastness.

It is further said to possess excellent solubility, level well and to be suitable for application to all forms of cotton and rayon in all types of equipment used for this class of work.

In combination with Bixamine Diazo Blue BRN shades of brown may be produced which discharge white with a neutral discharge printing paste.

* Registered Trade Mark.

Bixamine* Diazo Scarlet A Conc. 200%
(Bick)

A developed dye which, when diazotized and coupled with beta naphthol, yields bright scarlet shades on cotton and rayon.

It is said to possess good solubility, exhaust well and level readily, making it suitable for application to cotton and rayon in all forms.

The shades produced with this dyestuff are said to be characterized by excellent fastness to perspiration, mercerizing, organic acids and sea water; it also possesses good fastness to hot pressing, rubbing, alkali and washing.

* Registered Trade Mark.

Bixamine* Diazo Scarlet 2BL
(Bick)

A developed dye which produces brilliant scarlets when developed with beta naphthol. It is stated that the excellent solubility and level dyeing properties of this product warrant its use in dyeing rayon and cotton in all types of equipment used for this class of work.

It is said to possess excellent fastness to perspiration, alkalies, water and hot pressing and good fastness to washing, cross dyeing and rubbing.

* Registered Trade Mark.

Bixamine* Fast Rubine RLL
(Bick)

A dyestuff said to possess superior fastness to light for cotton and rayon. It levels well and can be recommended for shading other fast to light direct colors.

* Registered Trade Mark.

Bixamine* Rayon Black GS 200%
(Bick)

A direct color which produces full shades of black on rayon and cotton in all stages of its manufacture. It is very soluble and level dyeing. These properties warrant its use for dyeing rayon or cotton on the jig. Aftertreatment with formaldehyde appreciably improves the fastness to washing of Bixamine Rayon Black GS 200%. When so treated, this dyestuff also is said to possess very good fastness to ammonia, acids, crocking, stoving, hot moist pressing, perspiration, steaming and washing at 120° to 160°F.

Dyeings of this color are said to have good fastness to soda ash, fulling and light, salt water and water spotting.

* Registered Trade Mark.

Bixamine* Safranine 3B
(Bick)

A substantive dyestuff for cotton and rayon, said to be fast to alkali and acetic acid and of fair fastness to washing in light shades.

It dyes very level and is therefore serviceable as a red combination color for shading.

This dyestuff is chiefly recommended by the manufacturers for pinks and bright bluish reds on cotton and rayon.

* Registered Trade Mark.

Bixamine* Violet 2B

(Bick)

A substantive dyestuff for cotton and rayon. It is said to possess good fastness properties against acids, alkalies and perspiration.

* Registered Trade Mark.

Brilliant Alizarine Light Blue 3F

(Sandoz)

The latest addition to the Alizarine Light Blue series of Sandoz said to be recognized for their excellent fastness to light and level dyeing properties. The new product is reported by the manufacturer to be the brightest and fastest to light acid dyeing blue in their line, which should make it of interest for light, bright shades for wool piece goods, or yarn.

It is stated that, in combination with Alizarine Light Violet RCN, another new Sandoz product, pearl and baby blue shades of excellent fastness to light can be obtained. The brilliancy and fastness to light should make the color interesting to both the blanket and knitting trade. The color has excellent solubility and will be found very interesting for printing of wool, silk or nylon. On nylon, the color has very good fastness to washing, and unusual fastness to light.

Cadmium Orange Conc.
Cadmium Selenide Maroons Conc.
Cadmium Selenide Reds Conc.
Cadmium Yellows Conc.

(Acme)

Colors for printing. It is claimed that they are heat proof, weather proof (including tropical sun), and alkali proof.

Calco Soluble Vat Gray

(Calco)

A new water-soluble vat dye. It is primarily recommended by the manufacturers for printing cotton and viscose but it can also be used for dyeing. Calco Soluble Vat Gray serves as a basis for a range of gray shades of moderate to good light fastness and of very good fastness to washing and bleaching. Calco Soluble Vat Gray is particularly useful for dress goods printed with Calco Soluble Vat Dyes in conjunction with Calconyl Dyes.

Calcofluor White B
Calcofluor White 3R

(Calco)

New water-soluble compounds which impart a blue or blue-white fluorescence to cotton or viscose textiles when they are viewed under light containing some ultraviolet radiation. Very brilliant whites, much superior to those obtained by the use of ordinary "blueings", are said to be obtained by the application of very small amounts of Calcofluor White B and Calcofluor White 3R to bleached textiles. Calcofluor Whites B and 3R are also used for improving white effects in dyed or printed patterns. They are also used on unbleached textiles to simulate a bleached appearance and on certain dyed shades to increase brilliance.

It is stated that Calcofluor White B and Calcofluor White 3R are quite fast to alkalis and their effect on textiles is still noticeable after several washes. They are said to possess good fastness to bleaching with peroxides or hypochlorites, and to show somewhat better fastness to light than most fluorescent whitening agents.

Calconyl Scarlet R Double Solutions
Calconyl Red G Double Solution
Calconyl Red R Double Solution
Calconyl Red GB Double Solution
Calconyl Blue G Double Solution
Calconyl Yellow G Double Solution
Calconyl Yellow 2G Double Solution
Calconyl Golden Yellow R Double Solution

(Calco)

Calconyl Double Solutions combine the advantages of high dye concentration with a solution type of product which obviates the trouble encountered in producing solutions of powder dyes. The stability of Calconyl Double Solutions is said to be good over a period of several months when stored at temperatures not over 80°F. and above freezing.

Calconyl Double Solutions are printed and developed by acid aging using the customary procedures for stabilized azoic dyes.

Calcosol Fast Yellow Paste
Calcosol Fast Yellow Printing Paste
Calcoloid Fast Yellow Double Powder

(Calco)

Calcosol Fast Yellow is a new anthraquinone vat dye said to possess an attractive bright shade and very good fastness to light, washing and bleaching. It is claimed that, prior to the introduction of Calcosol Fast Yellow, pale, bright yellow shades with very good light fastness were unobtainable and that these shades can now be dyed to give a light fastness rating of 6.

Calcosol Fast Yellow is very level dyeing and can be applied by all methods of vat dyeing. For dyeing it is supplied in two types, a highly dispersed paste and a finely dispersed powder.

Calcosol Fast Yellow Printing Paste is especially formulated for application in printing, and prints on cotton or viscose are said to possess very good fastness to light, washing and bleaching.

Carbanthrene Golden Orange 4R Double Flakes

(National)

National Carbanthrene Golden Orange 4R Double Flakes possesses the all-around fastness of this type of vat dyes. It levels and penetrates well in light shades. It is especially suitable for producing tans, browns, russets, etc. on rayon and silk as well as on cotton in all forms. It possesses excellent fastness to sea-water, perspiration, chlorine, cross-dyeing and rubbing and good fastness to light, washing, boiling soap and soda ash.

Celliton Fast Yellow 7GA Conc.

(General)

A homogeneous dispersed dyestuff for the direct dyeing of acetate rayon (estron) and nylon. This is the greenest and brightest of the Celliton Yellows and at the same time it is said to possess very good fastness to light. It is stated that its other fastness properties, in general, are satisfactory, especially its resistance to atmospheric gas fading, since this Celliton dyestuff is not subject to this type of deterioration. The dyeing properties of this yellow are very good throughout a wide range of temperatures for both acetate rayon and nylon.

Celliton Orange 3R

(General)

A homogeneous dispersed dyestuff for the direct dyeing and for the printing of acetate rayon (estron) and nylon. It produces a fairly bright reddish orange shade on acetate of good tinctorial value, which make it useful not only for bright oranges but also as an economical base for browns and tans and as a dulling component of olives. The hue on nylon is appreciably redder than on acetate and yet it is not so red as that of Celliton Scarlet BA Extra.

Chlorantine Fast Orange T4RLL

(Ciba)

Chlorantine Fast Orange T4RLL produces reddish orange shades which are said to have good light fastness in all depths on viscose rayon and cotton. This color has good solubility and dyeing properties and is practically unaffected by the presence of iron or copper in the dyebath. Acetate rayon and nylon effects are reserved.

Chlorantine Fast Yellow 2CL

(Ciba)

A new addition to the Chlorantine series that produces a reddish yellow said to

possess better than usual direct color wash fastness. The light fastness is considerably improved by the application of urea formaldehyde resin finish and the shade remains practically unchanged.

Chlorantine Fast Yellow 2CL discharges to a clear white in all depths, both neutral and alkaline, making it a useful component in the production of dischargeable ground shades.

It is said to have good stability to all aftertreatments that are of an acid nature. There is practically no shade change produced by application of a water repellent or cationic finish.

Chromacyl* Yellow GR

(Du Pont)

A special acid dyestuff recommended by the manufacturer for a range of fast-to-light reddish-yellows which are said to have very good resistance to hot moist pressing, dry cleaning, salt water spotting and good fastness to washing, fulling and perspiration. It is especially useful for dyeing woolens and worsteds for women's wear and for bathing suit, sweater, carpet and knitting yarns as well as other articles that are designed for long service. It can be applied by the usual methods in conventional dyeing machines and is a very level dyeing color, showing excellent transfer at the boil. It has good penetrating and exhausting properties.

When used for dyeing multifiber or effect thread materials, acetate fibers are noticeably stained, cotton and rayon are stained a trace, while silk and nylon are dyed.

* Trade Mark.

Chromaven* Brilliant Violet R Supra

(American Aniline)

This newly developed chrome color features an intermediate shade tone plus desirable brilliance which lends itself to the production of full, bloomy self shades or for brightening navy blues and other deep shades. Yarn and piece dyers of wool and worsted are said to be offered a level dyeing product of high fastness rating.

* Reg. U. S. Pat. Office.

Chrome Fast Red GM

(Ciba)

A new addition to Ciba's Chrome Fast series of colors that has good all-round dyeing and fastness properties. Chrome Fast Red GM may be applied equally as well by the metachrome method as by the topchrome method. The dyeings produced by this color are said to have very good light fastness and excellent fastness to fulling, carbonizing and washing. Viscose rayon and cotton effects are reserved.

Cuprofix Blue FGL

(Sandoz)

A new product developed by the manufacturer particularly for dyeing by the Cuprofix Method. Even when dyed direct, this color is exceptionally fast and, according to the makers, is now their fastest to light direct dyeing blue. When dyed direct, the color is said to have unusual fastness to washing, perspiration, crocking, cold water and hot wet pressing. However, when aftertreated with Cuprofix, the fastness to washing is increased to a rating of 4-5 on spun rayon. Another outstanding feature is the excellent suitability of the color for both urea-formaldehyde and melamine treatment. Likewise, it is suitable by the combined Cuprofix-resin method whereby most unusual fastness to washing is said to be obtained. The color is also reported to discharge well, both neutral and alkaline, and leaves Acetate and Nylon white.

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†Cuprophenyl Red B L *
†Cuprophenyl Brown 2 R L *
†Cuprophenyl Yellow Brown R G L *

(Geigy)

The "Cuprophenyl" group of colors was developed in recent years—they are direct dyestuffs which with a simple aftertreatment of copper sulphate and acetic acid are said to achieve extreme fastness to light, washing, wet finishing and perspiration. They are as a group well adapted for use with anticrease resin finishes such as melamine and urea formaldehyde.

The range is being constantly expanded —the three colors indicated above being released only in the past year—other colors are in research at the present time and will be available in the not too distant future.

† Trademarked.
* Patented.

Diazine Orange DD

(National)

National Diazine Orange DD produces, on cotton or rayon, yellowish-orange shades which change to reddish-orange when diazotized and developed with National Developer B. It yields excellent unions on cotton-rayon materials and discharges to an excellent white.

It possesses good fastness to washing and peroxide bleach, very good fastness to cross-dyeing and excellent fastness to perspiration, acids, alkalies, mercerizing, water, sea water and rubbing.

Diazine Orange GR

(National)

National Diazine Orange GR is a new developed dye yielding, on cotton, rayon and silk, bright orange shades when developed with National Developer B. It is notable not only for the economy it affords but also for its easy dischargeability and excellent fastness to acids, alkalis and mercerizing. It possesses good fastness to fulling, perspiration, peroxide bleach and cross-dyeing.

Diazine Orange RFW

(National)

An orange direct dye which, when diazotized or developed with National Developer B, yields brilliant reddish-orange shades of good fastness to cross-dyeing and mercerizing and very good fastness to washing, organic acids, perspiration, seawater and water spotting. It discharges to a good white.

Diazine Red BFW

(National)

A developed red of superior fastness to washing comparing favorably in this respect with Class III vat dyes, particularly when dyed on rayon. It produces soft, bluish-red shades of very good fastness to fulling, peroxide bleach, and mercerizing.

Diazine Scarlet GFW

(National)

National Diazine Scarlet GFW is a new non-dusting developed dye for cotton or rayon. When developed with National Developer B it produces bright, scarlet shades of superior fastness to washing. It yields good unions on cotton-rayon materials and, in addition, leaves acetate rayon practically unstained.

National Diazine Scarlet GFW also possesses very good fastness to washing, perspiration, water, sea water and mercerizing.

Diazine Scarlet RWD

(National)

A non-dusting, developed dye producing, on cotton or rayon, somewhat bluish scarlet shades which, on diazotizing and developing with National Developer B, become deeper and yellower.

This product possesses excellent solubility, levels well, and yields excellent unions on cotton-rayon fabrics. It possesses good fastness to washing and excellent fastness to perspiration, sea water and organic acids. It discharges to an excellent white.

Diazine Violet BL

(National)

This is a non-dusting, developed dye for cotton or rayon. In direct dyeings it yields reddish violet shades which, on diazotizing and developing with National Developer B, become appreciably bluer and brighter in shade and of good fastness to washing, stoving, mercerizing, dry rubbing, water-spotting and organic acids; very good fastness to mineral acid and excellent fastness to water, sea-water and perspiration. It yields excellent unions on

cotton-rayon materials and discharges to a good white.

Diazo Brilliant Scarlet BBLA High Conc. CF
(General)

A homogeneous diazo type dyestuff for dyeing cotton, rayon and other cellulosic fibers in their various forms. When diazotized and developed with Developer AMS or Beta Naphtol it produces bright shades of bluish scarlet said to possess fairly good to good fastness to washing on cotton and good fastness to washing on rayon. It is stated that the product is valuable for dyeing rayon piece goods where good wet fastness is required and moderate light fastness is sufficient.

Diazo Brilliant Scarlet 3GA-CF
(General)

A new homogeneous diazo dyestuff for dyeing cotton, rayon and other vegetable fibers in their various forms. Dyed on cotton or rayon and developed with Developer AMS or Beta Naphtol, it produces fairly bright yellowish shades of scarlet said to possess fairly good to good wash fastness on cotton and good wash fastness on rayon. The fastness to light is moderate on cotton and fairly good on rayon.

Diazo Fast Bordeaux FBLA-CF
(General)

A new homogeneous diazo dyestuff. When applied to cotton, rayon, or other vegetable fibers and developed with Developer AMS or Beta Naphtol, it produces bright shades of bordeaux said to possess good wet fastness properties.

Diazo Orange LGA Conc. CF
(General)

A new homogeneous dyestuff which is suitable for the dyeing of cotton, rayon and other cellulosic fibers in their various forms. When diazotized and developed with Developer AMS or Beta Naphtol it produces fairly bright shades of reddish orange said to possess moderate to fairly good fastness to washing on cotton and rayon. The light fastness is fairly good on cotton and good on rayon.

Dipyrazo Scarlet 2BLL
(Pharma)

A deep scarlet shade with very good affinity for cotton and viscose. The product is intended to be developed with beta-naphthol. The shade is said to be clearer than most similar types. The wash fastness is said to be excellent for the depth of shade. The product stains acetate slightly —silk more so. The light fastness is said to be good. When developed with Developer Z, the product gives an extremely full, rich orange shade with very good wash fastness. After-treatment of the direct shade with formaldehyde and acetic gives a reddish tan shade of good wash fastness.

Dipyrazo Scarlet CSO
(Pharma)

A very bright, light shade of scarlet for cotton and viscose, to be developed with beta-naphthol. The solubility of this product is very high. The product stains nylon and silk, leaving acetate white. Good wash fastness and excellent perspiration and salt water fastnesses are said to be a feature. Both the neutral and alkaline discharges are slightly creamy in heavy shades.

Dipyrazo Scarlet RDX
(Pharma)

A deep, highly substantive shade of scarlet for cotton and viscose. The product also dyes wool, silk and nylon with a somewhat yellowish cast. Celanese is stained. Both the neutral and alkaline discharges are slightly creamy in heavy shades. It is stated that the product has good wash fastness, perspiration and salt water fastness and that the light fastness is also good.

Direct Brilliant Orange 3RC
(Ciba)

A very bright reddish orange. It is stated that it has good solubility, builds up to heavy depths and dyes level. This color has the usual wash fastness of a direct color but is greatly improved by a urea formaldehyde resin finish.

Direct Brilliant Orange 3RC changes to a yellow and clearer shade in artificial light and reserves acetate rayon.

Eastman Black DB
(Eastman)

Eastman Black DB is a highly dispersed dye base said to offer excellent economic advantages. Diazotized and developed with beta oxy naphthoic acid, it dyes cellulose acetate a full bloomy shade of black compared to the red types of dispersed blacks. It is stated that Eastman Black DB at high temperatures, penetrates and levels well with good exhaustion of dyestuff and is particularly recommended as a dispersed black for box dyeing.

Eastman Black DB is said to have very good fastness to light, washing, perspiration, sublimation and crocking. Eastman Black DB is not recommended for discharge work.

Eastman Blue GLT
(Eastman)

Eastman Blue GLT is a dispersed anthraquinone blue with excellent affinity which produces neutral shades of blue, particularly at low temperatures. This color may be used for jig or box dyeing with a temperature range of 160°F. to 180°F. It is stated that the excellent build-up properties at low temperatures will be found to offer economic advantages over high temperature dyeing blues in jig dyeing. When dyed in medium or dark shades Eastman Blue GLT is said to have good fastness to washing, perspiration, light and water. Eastman Blue GLT is unsuitable for discharge work and is not recommended for the production of print on styles. Due to low temperature affinity it is recommended for dark blues and greens in jig dyeing.

Eastman Blue GP
(Eastman)

Eastman Blue GP is a new highly dispersed anthraquinone acetate printing blue which produces full bright shades on cellulose acetate.

When printed in medium and heavy shades it is said to have very good fastness to light and washing. Eastman Blue GP also is said to have good fastness properties to perspiration, crocking, hot pressing and sublimation. Clear bright penetrated prints are obtained in screen and roller printing application.

Eastone Fast Red GLF
(Eastman)

Eastone Fast Red GLF is a new and distinctive development in acetate dyestuffs said to possess exceptional fastness to light, particularly for pastel shades.

Eastone Fast Red GLF produces a medium shade of red with a yellow cast and is recommended by the manufacturers for any combination shade where fastness to light is desired. Penetration and build-up properties are very good in a temperature range at 160°F. to 190°F. It is stated that Eastone Fast Red GLF also has excellent fastness properties to gas fading, sublimation, crocking, hot pressing, perspiration and washing. It is satisfactory for discharge work.

Erieform Brown RRF
(National)

A reddish-brown direct dye for formaldehyde after-treatment. It possesses good fastness to washing, fulling, acids and rubbing and very good fastness to perspiration, water, sea water and cross-dyeing.

†Erio Chromal Red G M
†Erio Chromal Red 4 G
(Geigy)

Two metachrome dyeing chrome reds which can be rated as light fast dyestuffs. The "GM" is a bluish shade, while the "4G" is a yellowish shade.

Erio Chromal Red 4 G has good solubility and is especially recommended by the manufacturers for use in package machines.

Both are very suitable reds for use as the red component for the metachrome

dyeing of fast mode shades on wool in combination with colors such as, Erio Chromal Orange ML, Erio Chrome Grey SGL and Erio Chrome Brown RLL.

† Registered—U. S. Trademark.

†Erio Fast Red 4 B L Conc.
(Geigy)

A sulfuric acid dyeing red said to possess exceptionally good light fastness, as well as good resistance to perspiration and washing.

This new dyestuff is exceptionally well suited for dyeing of carpet yarns and women's woolen wear where exceptionally level dyeing colors are required.

† Trademarked.

Fast Black Salt B
(Pharma)

A stable salt for application on Naphthol AS by normal methods, for printing, etc. The general properties are said to be excellent.

Fast Bordeaux Salt 3B
(Pharma)

A new stable salt, of a very bright, clear bordeaux shade. The product is said to have excellent properties for this group.

Fast Bordeaux Salt GP
(Pharma)

A new, full clear shade said to possess excellent properties for this group of colors.

Fast Orange Salt RDN
(General)

Soluble in water and couples directly with Naphtolates to form insoluble Naphtol colors. It principally yields reddish orange shades with most Naphtols. On grounds prepared with Naphtol AS-LB and AS-DB brown shades are obtained.

Fast Red Salt PDC
(General)

The diazotized and stabilized salt of Fast Red PDC Base. It is soluble in water and couples directly with naphtolates to form insoluble Naphtol colors. The use of Fast Color Salts in Naphtol application relieves the dyer and printer of the necessity of diazotizing the bases and greatly simplifies the preparation of developing liquors and print pastes.

Fast Red 3GL Base
Fast Red RL Base
Fast Red GL Base
Fast Violet B Base
(American Aniline)

An already comprehensive range of fast color couplings is appreciably extended by this group of fast bases. They are said to offer the naphthol dyer and printer the maximum in diazo solubility as well as the usual high fastness ratings associated with this type of textile coloring.

Fast Violet B Salt
(American Aniline)

This new stabilized salt of the Fast Violet B Base is completely and readily soluble in cold water. To the printer and dyer who seeks simplicity and facility in preparing his fast napthol couplings, here is an item said to afford these requisites plus the customary good fastness properties of the diazotized base. Suitable for use in practically all application equipments. Stability of this salt is good.

Fast Violet B Salt
(Pharma)

A deep, clear violet shade is obtained with this new product. It is stated that the properties are excellent, and fully in keeping with this group of colors.

Fast Wool Red 4BL
(Pharma)

A level dyeing, deep bluish red for application on wool by the acid methods. The product leaves acetate, viscose and cotton effects white, dyeing silk. It is stated that the light fastness is very good, with good all around wet fastness properties and good milling and fulling fastness.

Fastusol Blue L5GA
(General)

A new homogeneous direct dyestuff of the Fastusol series which produces bright shades of greenish blue when applied to cotton, rayon and other cellulosic fibers. It is said to possess very good fastness to light on cotton and excellent fastness to light on rayon. This property makes the product especially suitable for the dyeing of rayon piece goods where a high degree of light fastness is required.

Fastusol Orange L7GL-CF
(General)

A new homogeneous direct dyestuff of the Fastusol series which is suitable for the dyeing of cotton, rayon and other cellulosic fibers. It produces fairly bright shades of orange said to possess very good fastness to light on cotton and rayon when exposed either in the Fade-Ometer or in sunlight.

†Gycolan Blue 2 R L
†Gycolan Red B R L
†Gycolan Orange G R L
†Gycolan Green B L Conc.
(Geigy)

The latest additions to the Gycolan range of level dyeing, fast to light colors for wool or worsted piece goods and yarns. It is stated that this range has better fastness to perspiration and washing than the ordinary level dyeing acid colors and their good penetration makes them well adapted for dyeing tightly spun and woven ladies' and men's piece goods.

† Trademarked.

Hidacid Light Yellow 2G (C.I. 639)
Hidacid Metanil Yellow (C.I. 138)
Hidacid Tartrazine Ex. Conc. 115% (C.I. 640)
Hidacid Fast Orange G Ex. Conc. (C.I. 27)
Hidacid Orange II Conc. (C.I. 151)
Hidacid Brilliant Crocein Scarlet Conc. (C.I. 252)
Hidacid Fast Scarlet 3R (C.I. 185)
Hidacid Amaranth Ex. Conc. (C.I. 184)
Hidacid Azo Rubine Conc. (C.I. 179)
Hidacid Fast Crimson Ex. Conc. (C.I. 31)
Hidacid Resorcin Brown R Conc. (C.I. 235)
Hidacid Azure Bue (C.I. 671)
Hidacid Wool Violet Ex. Conc. 144% (C.I. 698)
Hidacid Fast Violet 10B 100% (C.I. 696)
Hidacid Fast Green B Conc. (C.I. 667)
Hidacid Emerald Green (C.I. 666)
Hidacid Naphthalene Green (C.I. 735)
Hidacid Wool Green Conc. (C.I. 737)
Hidacid Blue Black Conc. (C.I. 246)
Hidacid Uranine (C.I. 766)
Hidacid Eosine (C.I. 768)
Hidacid Fluorescein (C.I. 766)
Hidacid Phloxine B (C.I. 778)
(Hilton-Davis)

These dyestuffs represent the range of acid type dyes offered by Hilton-Davis to the textile, leather and paper trade.

Hidaco Safranine Ex. Conc. (C.I. 841)
Hidaco Victoria Blue B (C.I. 729)
Hidaco Victoria Blue R Conc. (C.I. 728)
Hidaco Basic Blue 6G Conc. (C.I. 658)
Hidaco Victoria Blue BGO Conc. (Pr. 198)
Hidaco Methylene Blue 2B Conc. (C.I. 922)
Hidaco Caribbean Blue Conc. (C.I. 663)
Hidaco Basic Blue 10G (C.I. 658)
Hidaco Crystal Violet Conc. (C.I. 681)
Hidaco Brilliant Green Crystals (C.I. 662)
Hidaco Malachite Green SC (C.I. 657)

Hidaco Malachite Green LC (C.I. 657)
Hidaco Malachite Green Base (C.I. 657)
Hidaco Victoria Blue B Base (C.I. 729)
(Hilton-Davis)

These products are representative of the basic dyestuffs offered to the textile, leather, paper and pigment trade by Hilton-Davis.

Hiltonaphthol AS
Hiltonaphthol AS-D
Hiltonaphthol AS-OL
Hiltonaphthol AS-PH
Hiltonaphthol AS-RL
Hiltonaphthol AS-BS
Hiltonaphthol AS-BG
Hiltonaphthol AS-E
Hiltonaphthol AS-BO
Hiltonaphthol AS-SW
Hiltonaphthol AS-ITR
(Hilton-Davis)

Products of the Naphthol AS series which when coupled with the range of fast color salts or diazotized bases produce shades said to be of good to excellent fastness properties on cotton and rayon.

Hiltonil Fast Yellow GC Base
Hiltonil Fast Orange GC Base
Hiltonil Fast Scarlet G Base
Hiltonil Fast Scarlet RC Base
Hiltonil Fast Scarlet R Base
Hiltonil Fast Scarlet 2G Base
Hiltonil Fast Red KB Base
Hiltonil Fast Red ITR Base
Hiltonil Fast Red B Base
Hiltonil Fast Red GL Base
Hiltonil Fast Red 3GL Base
Hiltonil Fast Bordeaux GP Base
Hiltonil Fast Garnet GBC Base
Hiltonil Fast Blue B Base
(Hilton-Davis)

Diazotizable fast bases which when diazotized and neutralized will couple with the naphtholates to form insoluble colors.

Hiltosal Fast Yellow GC Salt
Hiltosal Fast Orange GC Salt
Hiltosal Fast Orange GR Salt
Hiltosal Fast Scarlet 2G Salt
Hiltosal Fast Scarlet R Salt
Hiltosal Fast Red 3GL Salt
Hiltosal Fast Red AL Salt
Hiltosal Fast Red GL Salt
Hiltosal Fast Red ITR Salt
Hiltosal Fast Red B Salt
Hiltosal Fast Red RC Salt
Hiltosal Fast Bordeaux GP Salt
Hiltosal Fast Blue B Salt
(Hilton-Davis)

These products are the diazotized and stabilized salts of the corresponding fast bases. They are water soluble and couple directly with the naphtholates to form insoluble naphthol colors. It is stated that their ease of solubility eliminates the necessity of diazotizing the base and greatly simplifies the preparation of developing liquors and print pastes.

Indanthrene Brilliant Yellow 3G Paste
(General)

A new homogeneous, anthraquinone vat dyestuff for dyeing cotton, rayon and mixtures containing cotton or rayon and wool. This dyestuff produces bright greenish yellows which are said to meet the pressing demands of the trade for improved fastness properties of such shades. It is stated that the outstanding fastness to light, laundering and weathering of this dye should be of interest to the dyer of yarn or piece goods for toweling, sports wear, sheetings and draperies.

Indanthrene Red Brown 5RF Paste CF
(General)

A homogeneous anthraquinone vat dyestuff of a pronounced reddish brown shade said to possess excellent all-round fastness properties. For this reason it should be of interest for use on materials such as towels, shirtings and awnings requiring outstanding fastness to light, chlorine, washing and weather exposure.

Indanthrene Red RK Double Paste
(General)

A homogeneous anthraquinone vat dyestuff said to be of good fastness to light, washing and chlorine. It should be of particular interest for use on materials such as towels, shirtings and awnings requiring maximum fastness to laundering and weather exposure.

Indanthrene Scarlet 3GA Extra Paste Fine
(General)

A new straight vat dyestuff which is a very valuable addition to the range of Indanthrene dyestuffs. It is standardized in a form suitable for dyeing and printing.

Interchem Acetate Green-Blue ALF-40
Interchem Acetate Yellow GLF-40
Interchem Acetate Pink BLF-40
(Interchemical)

Three new fast-to-light dyes for dyeing acetate rayon and nylon. All three dyes are said to be characterized by exceptional fastness to sunlight, as compared with ordinary acetate dyes. On acetate rayon even pastel shades withstand 40 hours' Fade-Ometer exposure with no color change. They withstand urea formaldehyde finishes. The new dyes can be employed for producing self shades, or in combination with one another for compound shades. They are recommended by the manufacturers particularly for dyeing men's wear, sportswear, beachwear, and better-quality women's wear.

Interchem Acetate Green-Blue ALF-40 produces a brilliant greenish-blue shade. Interchem Acetate Yellow GLF-40 produces a bright yellow shade. Interchem Acetate Pink BLF-40 produces a bright bluish-pink shade on acetate rayon, and a much bluer shade on nylon. The new dyes are low-temperature dyeing colors, and can be applied on jigs or boxes at temperatures of 160 to 190°F.

Mayvat Brown AG Double Paste
(Otto B. May)

C.I. 1152. A popular brown of the vat color series which is said to possess very high fastness to light, washing, chlorine, etc. This product is offered in paste form which is suitable for all types of dyeing and padding operations.

Mayvat Jade Green Fine Double Paste
(Otto B. May)

C.I. 1101. Especially suited for all types of pigment padding for all piece goods or yarn since the color is specially dispersed and has a particle size of 1 to 2 microns.

Metomega Chrome Grey BLC*
(Sandoz)

The latest addition to the Metomega Chrome line of colors outstanding for their excellent fastness properties when dyed Metachrome. The new Grey BLC is bluer in shade than other greys in this series. The outstanding features of this grey are reported to be its very good fastness to carbonizing and its unusually good fastness to potting, particularly when dyed Metachrome. Like other colors in this series, the new product dyes exceptionally level on tippy wool, and is said to have excellent fastness to light, fulling and perspiration. When dyed Metachrome, it shows very good resistance to the damaging effect of iron and copper.

* Patent applied for.

Metomega Chrome Red 2GLL*
(Sandoz)

Another new addition to the Metomega Chrome line of colors, reported by the manufacturer to be the fastest to light of all their chrome reds. Like other colors in this series, this new product is said to have extreme fastness to fulling, carbonizing and decatizing. The shade of the new product is considerably yellower than its predecessor, Metomega Chrome Red GM. It is stated that the extreme fastness to light of the new product will make it an excellent shading color for the various fast to light greens, greys and browns in the series.

* Patent applied for.

Milling Fast Red RS
(Nyanza)

A new addition to the line of Milling Fast Colors which is particularly recommended by the manufacturers for machine dyeing on account of its excellent solubility. It produces a bright shade of red somewhat yellower than Milling Fast Red R Extra Conc and not as yellow as Milling Fast Red GL Conc.

Neolan Orange GRE
Neolan Red BRE
Neolan Bordeaux BE
Neolan Green BL Conc.
(Ciba)

The above four Neolan colors, which have recently been put into production, are said to be noted for their all-round good fastness and excellent dyeing properties and are highly recommended by the manufacturers for dyeing unneutralized carbonized material. Neolan Red BRE and Neolan Bordeaux BE are particularly suitable as ground shades for discharge patterns.

Niagara Fast Copper Blue EG
(National)

This is a new, non-dusting, direct blue yielding, on cotton or rayon, bright, reddish shades of blue. When aftertreated with copper the shades become somewhat greener and duller but their light fastness is vastly increased.

Niagara Fast Copper Blue EG possesses good solubility and is unaffected by Monel or copper and dulled but slightly by iron. It has good affinity for pure silk, or tin-weighted silk; very good affinity for rayon and yields very good unions on cotton-rayon materials.

Nyagene Brilliant Scarlet RA Extra
(Nyanza)

A new addition to the line of Nyagene Brilliant Scarlets which when diazotized and developed with beta-naphthol, produces a shade somewhat brighter and bluer than Nyagene Brilliant Scarlet GL Extra Conc. It discharges to a clear white with hydrosulfite.

Nyalite Fast Blue 8G
Nyalite Fast Brown 3RL
Nyalite Fast Violet B
Nyalite Fast Red 3BL
Nyalite Fast Grey 3GL
(Nyanza)

A new group of direct dyestuffs which is said to have exceptionally good fastness to light. They are readily soluble and are, therefore, suitable for package dyeing. The fastness to washing may be still further improved by aftertreatment with formaldehyde. It is stated that, on account of their outstanding fastness to light, these colors are of interest for dyeing goods which are subsequently crease proof finished.

Nyanza Sky Blue 6B Extra Conc.
(Nyanza)

Produces a bright shade of sky blue on rayon and cotton. An aftertreatment with copper salts improves the light fastness.

Nyasol Fast Blue 2R
Nyasol Brilliant Blue B
Nyasol Fast Bordeaux R
Nyasol Fast Brown 2G
Nyasol Fast Orange GN
Nyasol Fast Red GGS
Nyasol Fast Violet 3R
Nyasol Fast Yellow GLN
Nyasol Fast Yellow GR
(Nyanza)

New additions to the line of metallized wool colors. They are dyed from strongly acid baths and produce shades said to be of very good all around fastness to light, perspiration and washing. They are suitable for dyeing ladies dress goods, worsteds and gabardines, and are characterized by their excellent level dyeing properties. They are also of interest for dyeing carpet yarns which are afterwards subjected to the oriental chlorine wash.

Para Orange 3R-CF
(General)

A new homogeneous Para color which produces bright reddish shades of orange on cotton, rayon and other vegetable fibers when coupled with Nitrazol CF Conc. It is said to possess moderate to fairly good fastness to washing on both cotton and rayon. The light fastness is poor to moderate on cotton and moderate on rayon. Aftertreatments with resin finishes for anticrease effects do not affect the light fastness.

Para Orange RRA-CF
(General)

A new homogeneous Para color which produces fairly bright reddish shades of orange on cotton and rayon when coupled with Nitrazol CF Conc. It is said to possess fairly good fastness to washing on both cotton and rayon. The light fastness is only poor to moderate on cotton but fairly good on rayon.

Pharmalan Green B
(Pharma)

A rich, full green of the chromiferous type. The product is very level dyeing, dyeing wool, silk and nylon, and leaving acetate, viscose and cotton white. It is stated that the product has very high light fastness with excellent wash fastness and that the milling and fulling, perspiration and salt water fastness are good.

Pharmalan Navy Blue B
(Pharma)

A new type of the chromiferous group. The product is said to be very level dyeing on wool, with some affinity for silk. Acetate, viscose and cotton remain white. It is stated that the product has excellent fastness to washing, very good fastness to light, good milling and fulling fastness and that the perspiration and salt water fastness are very good. In deep shades, rich navies are obtained.

Pharmalan Navy Blue R
(Pharma)

A level dyeing chromiferous type for application on wool. Deep navy shades are obtained with a slight reddish cast. It is stated that the product has excellent light fastness and that the wash fastness is excellent, with good wet properties, good milling and fulling fastness.

Pharmalan Orange G
(Pharma)

A new, clear, level dyeing shade of orange of the chromiferous group. The product dyes wool, nylon and silk, leaving acetate, viscose and cotton white. It is stated that the product has excellent wash fastness, very good milling and fulling properties, that the light fastness is good, and that perspiration and salt water fastnesses are excellent.

Pharmalan Yellow 6G
(Pharma)

An extremely bright, clear, greenish yellow, level dyeing on wool. It is stated that this chromiferous type has excellent wash fastness and light fastness, that the milling and fulling properties are good, and that the perspiration and salt water fastnesses are very good. The product dyes nylon, wool and silk, leaving acetate, viscose and cotton white.

Pharmalan Yellow GR
(Pharma)

A level dyeing yellow with a reddish full cast. This chromiferous type dyes nylon, silk and wool, leaving acetate, viscose and cotton white. It is stated that the wash fastness is excellent, with good milling and fulling properties and that the product has very good light fastness with excellent perspiration and salt water fastnesses.

Pharmasol Black BR Double
(Pharma)

A Pharmasol solution for economical printing, giving a full jet black shade said to be of good light and wash fastness.

Pharmasol Violet B
(Pharma)

A clear, deep shade prepared in a simple, economical form for ease of application. It is said to have good light fastness and excellent wash fastness.

Pharmol Black BR
(Pharma)

A new Pharma type prepared in concentrated powder form. It is stated that the product has excellent solubility, giving a jet black shade of good light and wash fastness.

Pharmol Brown R
(Pharma)

A new Pharma type prepared in concentrated powder form. It is stated that the product has excellent solubility, giving a reddish brown shade and that it has good light and wash fastness.

Pharmol Seal Brown
(Pharma)

A new Pharma type prepared in concentrated powder form. It is stated that the product has excellent solubility, giving a deep shade with good light and wash fastness.

Pharmol Violet B
(Pharma)

A new Pharma type prepared in concentrated powder form. It is stated that the product has excellent solubility, giving a shade of clear, deep violet and that it has good light fastness and excellent wash fastness.

Ponsol* Olive T Paste
(Du Pont)

An anthraquinone vat dye for cotton and viscose process rayon. It produces neutral olive shades said to possess excellent fastness to light and is recommended especially for military fabrics, industrial uniforms, work clothing and other materials that may encounter severe treatment during wear and washing. It is said to show good fastness to crocking, moist pressing, water spotting, laundering with chlorine, washing and dry cleaning. It is applied by the usual vat dyeing methods and is especially suitable for use in the Du Pont Pad-Steam Continuous Dyeing Process. It is said to reduce readily to a black vat, penetrate thoroughly, level well and have a very good exhaust. The metals normally encountered in dyeing equipment have a negligible effect on the shade. Soaping, however, changes the shade appreciably greener.

* Registered Trade Mark.

Pontamine* Diazo Bordeaux RLN
(Du Pont)

A developed color which produces bright, bordeaux shades on both viscose-process rayon and cotton. It is particularly suitable for white discharge work on these two fibers, and is said to possess very good resistance to perspiration, salt water, dry crocking, dry cleaning, coupled with good fastness to washing and cold water. The wash fastness on viscose-process rayon is slightly superior to that on cotton. It is recommended by the manufacturers as a base for maroon, burgundy, wine, and similar ground shades for discharge patterns on dress goods and other materials where good fastness to wet processing is important. It is also suitable for acetate-white effects. It is stated that it has good solubility, penetrates well, dyes levelly and can be applied in the usual types of equipment. It is normally coupled with beta naphthol.

* Registered Trade Mark.

Pontamine* Fast Brown 8RL
(Du Pont)

An excellent fast-to-light direct dye for producing shades of bright reddish-brown on both cotton and viscose-process rayon. It is said to have good fastness to dry cleaning and dry crocking and to possess fairly good resistance to perspiration, hot moist pressing and moist crocking. Because of its very good light fastness it is especially useful for the production of the deeper brown shades on draperies, curtains and similar materials and is recommended as a reddening element for taupe shades on automotive upholstery fabrics. It is stated that it is readily soluble, penetrates and levels well. It can be applied in the customary types of dyeing equipment. In multi-fiber work, it dyes rayon, silk and wool, stains nylon considerably and noticeably stains acetate. It is also suitable for shading cotton in cotton-wool unions. Crush-proofing treatments applied to dyed cotton change the shade redder and weaker and decrease the light fastness. When these treatments are applied to rayon the shade becomes considerably redder and weaker and the fastness to light is also lowered.

* Registered Trade Mark.

Pontamine* Diazo Orange N Conc.
(Du Pont)

A brilliant reddish-orange that can be discharged to a pure white on both cotton and viscose-process rayon. It is said to possess good resistance to crocking, hot moist pressing, steaming and cold water. It is especially recommended by the manufacturers as a base for brown and tan ground shades for discharge patterns on dress goods and is equally suitable for shading reds and scarlets. t is stated that it is readily soluble, penetrates and levels well. It is unaffected by metals and can be applied to all forms of cotton and viscose-process rayon by the usual methods. It stains nylon noticeably, dyes silk and wool and is of special interest for producing acetate white effects in cotton-acetate unions. It is normally coupled with beta naphthol.

* Registered Trade Mark.

Pyrazol Discharge Orange GL
(Sandoz)

The color, recently announced by the manufacturers, is reported to be the fastest direct orange in their line, even when tested in the Fade-Ometer. 1% dyeings on cotton are reported to look well after 80 hours of fading. They further state that it has good fastness to washing and perspiration and reserves acetate rayon. Of most importance is the fact that this new product discharges white with alkaline discharge paste on both cotton and rayon, making it an interesting color for dyed grounds to be overprinted with Vat colors. Extreme fastness to light should make the product of interest for the dyeing of the cotton or rayon in union fabrics for automobiles and furniture upholstery.

Pyrazol Fast Red 6BL
(Sandoz)

Reported by the maker to be an exceptional level dyeing color with unusual fastness to light with a rating of 6.7 on a 1% dyeing on spun rayon. It is reported to leave acetate a good white and be suitable for discharge work for small patterns. Inasmuch as the color only stains wool slightly, it should prove of interest to dyers of union fabrics for automobile and furniture upholstery where fastness to light is also of such great importance.

Pyrazoline Blue CF 2B
(Pharma)

A new, clear blue shade for cotton and viscose. The product leaves nylon and acetate white, staining silk and wool very slightly. The product gives a white discharge, both neutral and alkaline. It is stated that the wash, perspiration and salt

water fastnesses are very good and that the product has very good light fastness and excellent affinity for dead cotton, or motes, and should be very useful in obtaining superior shades, where this condition is present. Stands after-treatment with crease-proofing compounds and will not change shade with copper salt after-treatment.

Pyrazoline Blue GF Conc.
(Pharma)

A reddish blue, substantive type for cotton and viscose, leaving acetate white. The product discharges white, both with neutral and alkaline pastes. It is stated that the wet properties are good, with good light fastness. The shade is not changed by copper salt after-treatment.

Pyrazoline Orange 5G
(Pharma)

A very bright, clear, substantive orange for cotton and viscose. The product leaves Celanese and nylon white, staining silk and wool lightly. The neutral discharge on rayon is white. It is stated that the product has very good wet fastness properties and good light fastness. The shade is not changed by copper salt after-treatment.

Rapidogen Golden Yellow IFG
(General)

A stabilized azoic composition in powder form, which is employed for printing bright, golden-yellow shades on cotton, linen and rayon fabrics. It is stated that full shades exhibit very good to excellent (6-7) fastness to light, good to very good (4-5) fastness to washing and good (4) fastness to chlorine. This dyestuff is thus comparable with vat dyestuff with respect to fastness and is in general superior to all other general superior to all other Rapidogen yellows except the very greenish-yellow 14GA brand.

Rapidogen Red IGG
(General)

An azoic compound soluble in caustic soda which, after printing and acid aging, develops in the form of an insoluble dyestuff which is said to have superior wet fastness properties and very good fastness to light.

Rapidogen Yellow I4GA
(General)

An azoic compound soluble in caustic soda which, after printing and acid aging, develops in the form of an insoluble dyestuff which is said to possess very good fastness properties. The excellent light fastness of this product should be of particular interest as it is fast enough for drapery prints.

Solantine Blue Green FWL
(National)

This is a non-dusting, direct green of excellent fastness to light. It possesses excellent solubility and level dyeing properties yielding, on cotton or rayon, bluish green shades of good fastness to perspiration, water, set-water and rubbing and excellent fastness to acids, alkalies and light. It stains wool and silk but leaves acetate rayon clear. It is readily dischargeable.

Solantine Brown 8RL
(National)

This is a non-dusting direct brown producing a very reddish, rather bright brown shade of excellent fastness to light, alkali, and organic acid and good fastness to perspiration, sea water, water, rubbing and hot pressing. It possesses good solubility and is but little affected by metals. It has excellent affinity for rayon, when dyeing at 180°F., and yields excellent unions on cotton-rayon materials. Silk effects are slightly stained but acetate rayon is left clear.

†Solophenyl Orange 5 R L
(Geigy)

Claimed to be one of the fastest to light red shades of direct orange on the market. It is stated this new dyestuff discharges well, reserves acetate and with its excellent solubility is well adapted for application printing.

† Trademarked.

†Solophenyl Red 6 B L
(Geigy)

A yellowish shade of red said to possess exceptionally good light fastness, and which reserves acetate and discharges very well. It is also recommended by the manufacturer for application prints on cotton and rayons where a high degree of light fastness is necessary.

† Trademarked.

†Solophenyl Violet 4 B L
(Geigy)

Said to be an exceptionally fast to light direct violet whose shade and light fastness are only very slightly affected by urea formaldehyde finishes. A bluish shade of violet, it is stated that it has been found exceptionally useful for producing shades on draperies and upholstery fabrics whose good light fastness is a requirement.

† Trademarked.

Spirit Soluble Fast Green B
(National)

As indicated by the name, Spirit Soluble Fast Green B is an alcohol soluble dye. It also possesses very good solubility in Carbitol, Cellosolve and Methyl Cellosolve. It yields yellowish green shades of good fastness to light and to bleeding in water. It is non-dusting.

Spirit Soluble Fast Green B is a companion product to the other National Spirit Soluble Fast Dyes for use in wood stains.

Superlitefast Orange LLLWF
(Althouse)

A new offering in the extremely fast to light series of Superlitefast direct dyes for cotton and rayon. It is far superior in light fastness to previous offerings and may be used wherever maximum light fastness is required. It is said to be ideal for the dyeing of upholsteries, draperies, and other fabrics requiring extreme fastness to light. It is stated that it is extremely level dyeing in all percentages, that it has excellent solubility and that it is applicable on all types of dyeing equipment. It may also be used with urea formaldehyde and other curable resin finishes which greatly increase the fastness to washing and do not impair the light fast properties.

Supramine Yellow 3GLA-CF
(General)

A level dyeing acid dyestuff which produces bright greenish shades of yellow. It is stated that this new product fills a long felt need for a bright well levelling yellow which is fast to light and at the same time possesses fairly good fastness to washing. In addition it is said to be very fast to hot pressing, stoving, decatizing and carbonizing. The fastness to salt water is fairly good, better than most acid dyes.

Xylene Fast Red 6BL
(Sandoz)

Xylene Fast Red 6BL is reported by the manufacturers to be one of the fastest to light acid reds available, and considered one of the most level dyeing colors with sulfuric acid. They further state that the fastness to washing and perspiration is extremely good for an acid color. It also has good fastness to carbonizing, decatizing and stoving.

TEXTILE CHEMICALS

Acrolein
(Carbide and Carbon)

A water-white, volatile liquid containing both a carbonyl group and an unsaturated linkage which reportedly may be reacted independently or simultaneously to yield a variety of products. It is suggested for the modification of cellulosic materials. Its primary derivatives are of interest as coupling agents and dyestuff intermediates. Arcolein will copolymerize with other monomers to form resins of interest in the finishing of textiles, it is said.

#1153 Adgrip Adhesive Base
(Adhesive)

Recommended by the manufacturers for use where conventional animal, vegetable, and latex adhesives are unsuitable. Said to be suitable for laminating paper, metal foils, fabric and leather to themselves or to glass, metal, asphalt, cork, plastics and food. Commercially available.

#1790 Adgrip Adhesive Base
(Adhesive)

A low-priced adhesive base for surfaces difficult to adhere. It may be compounded with latex vinyl emulsions or starch to form adhesives which will adhere to metal, plastic and coated surfaces. Commercially available.

Ahco 111 Paste
(Arnold, Hoffman)

A cationic substantive finishing compound, said to possess outstanding properties as an antistatic agent for nylon and acetate, etc. Imparts desirable softness, in addition to its static control properties. Is available in both medium and high solids range. May be applied on pad or quetch, or substantively in beck or kettle.

Ahcofix C
(Arnold, Hoffman)

A dye fixative to be used in conjunction with copper salts for a specially selected range of direct dyestuffs to produce improved wash-fastness. Best results attained when used in conjunction with urea formaldehyde-melamine resin finishes as a pad application used in finishing spun rayons and rayon blends. Without resins, may be applied substantively to impart improved fastness to wet processing, perspiration and steam pressing.

Ahcoprint P
(Arnold, Hoffman)

New type binder to be used in conjunction with starch thickeners for the printing of water-dispersible pigment colors. May be printed in conjunction with Rapidogen and Indigosol colors. Said to possess excellent wash fastness with a minimum of crocking. Can drying (no curing required) followed by aging and alkaline wash suffice for fixation. Is available as a readily soluble pale yellow liquid.

Alcogum AN-5
(Alco)

A synthetic water-soluble thickener derived from acrylonitrile. It is said to be useful for increasing length in print gums and general thickening of aqueous dispersions of pigments, resins, and rubbers. It is said to be particularly valuable for compounding synthetic (GR-S) rubber latex since it outstandingly improves the stability of such a compound to dilution with water and maintenance of consistency on storage.

Alkapen
(Burkart-Schier)

The latest addition to the Alkapen series of mercerizer's assistants. It is said to be effective in caustic of very high concentration—in the range of 75 to 80°Tw. The product is water-soluble as well as soluble in high-strength caustic.

Alrofix 20
(Alrose)

A direct color fixative. Alrofix 20 is a clear colorless liquid for aftertreating direct colors on cottons and rayons to improve fastness to water, damp ironing, wet crocking and perspiration. It is stated that it does not affect shades or light fastness. It is recommended by the manufacturers for preventing bleeding and mark-off on white prints and discharges, and for preventing migration of colors in the finishing bath or before fabric can be dried. It is said to improve wash fastness of direct colors aftertreated with urea formaldehyde or melamine resin crease-resistant finishes. Alrofix 20 is suggested for use on linings, dress goods, furniture covers, rainwear and umbrellas.

Alrolenes
(Alrose)

Concentrated dry cleaning detergents. Alrolene 65 for synthetic or chlorinated solvents and Alrolene 70 for petroleum solvents, when used in the proportion of 2-3 ounces per 100 pounds of garments, are said to increase solvent efficiency more than 35% and prevent soil redeposition. The Alrolenes are said to strip off dirt, soften fabrics and emulsify water when desired. It is claimed that extensive plant trials prove that these detergents reduce spotting, lower the number of re-runs and wet cleaning operations and that silk pass-ups have been doubled and reversibles have reached 80% or better. The Alrolenes are simple to use as slop spotters, dry soaps, wet filter soaps, moisturized soaps or in two soap processes.

Alromine RW 53
(Alrose)

A cationic softener which is said to improve the pliability, softness, drape and full hand of textiles. It is said to permit high temperature drying or aging without yellowing of whites or effect on colors. It is stated that Alromine RW 53 is effective in very low concentrations and combines with fibers to render the finish resistant to laundering and dry cleaning and that it exhibits no chlorine retention, no development of rancidity and has a negligible effect on shades or lightfastness of dyeings. Alromine RW 53 has antistatic action on acetates and nylon. Available in various concentrations for ease and diversity of application.

Alrosperse CV
(Alrose)

A levelling, stripping and dispersing agent for vat dyes. Alrosperse CV is said to have the ability to reduce agglomerate particle size of dyestuffs. As a dispersant for vat dyes, it is said to insure level dyeings in low concentrations. In higher concentrations it is effective as a retardant and stripping additive with hydrosulfite. Although intended primarily for vat dyes it can be used with direct dyes for similar applications if the dyebath is not acid. It is stated that Alrosperse CV has no deleterious effect on the fiber and can be used with many finishes as an emulsifying adjuvant.

Alvasol 255
(Synthron)

Alvasol 255 is a concentrated dry cleaning detergent. It is soluble in dry cleaning solvents, and may be added directly to the solvent or a concentrated solution may first be prepared, emulsified with water, and then added to the machine. A solution of Alvasol 255 in Stoddard Solvent is said to tolerate an exceptionally large amount of water without clouding. It is used in the dry cleaning and metal cleaning industries.

Amapon* B Liquid
(American Aniline)

A new sequestering agent of value for

effectively reducing adverse dulling action and other shade changes due to presence of metals. This dyeing assistant, among other uses, is recommended by the manufacturers as a stabilizer in naphthol dyeing, and printing. Stability is high with relation to changes in pH values as well as degrees of water hardness.

* Reg. U. S. Pat. Office.

Ambertex M
(National Starch)

A printing thickener intended to replace British gums. It is said to deposit a soft pliable film, give excellent penetration, produce smooth, uniform blotches and wash out easily and thoroughly. It requires no cooking or cooling and its uniform viscosity and nonjelling properties are said to permit higher printing speeds and cleaner operation on machines.

Ammonium Gluconate-Technical
(Pfizer)

A new acid-forming catalyst for textile printing with Indigosol-type, acid, direct and chrome dyestuffs, and for the application of resin textile finishes. The crystalline ammonium salt of gluconic acid, it is stable, free-flowing and of uniform composition. Crystalline character assures a ready solubility in water and a uniform distribution in print paste formulations.

Upon steaming, ammonium gluconate rapidly produces nonvolatile gluconic acid and is said to form an efficient mild acid medium for the development of bright colors of greater color value. Will not precipitate the color prematurely and produces stable print pastes. Strong metal sequestering action of gluconic acid is said to inhibit dulling and offshades in the presence of trace contaminants of iron and copper.

Amprozyme
(Jacques Wolf)

A water-soluble, biological product high in amylase and protease but also containing catalase, rennet, lipase, invertase, and other enzymes. It is said to be characterized by its high temperature stability. It is used in textile desizing, and general starch and protein solubilization.

Anionic Duller
(Jersey)

A dispersion of pigments in an alkaline medium which is compatible with most available anionic softeners.

Antifoam "AF"
(Laurel)

Said to have excellent defoaming qualities and is used for removing foam from dyebaths, finishing baths, size boxes, etc.

Appretole* 120
(Warwick)

An anionic substantive finishing agent designed for use on all types of cellulosic fibers. It may be applied by padding or exhausting. It is said to be effective at very low concentrations to impart softness and fullness to the fabric. Being composed entirely of saturated materials, it is very resistant to oxidation. It is supplied in the form of a cream colored paste which disperses readily in warm water to form translucent solutions.

* Reg. U. S. Pat. Office.

Appretole* 172
(Warwick)

An anionic substantive finishing agent designed for use on all types of cellulosic fibers. It may be applied by padding or exhausting. It is said to be effective at very low concentrations to impart softness and fullness to the fabric. Being composed entirely of saturated materials, it is very resistant to oxidation. It is supplied in the form of a cream colored paste which disperses readily in warm water to form translucent solutions.

* Reg. U. S. Pat. Office.

Aquakal #77
(Kali)

An amino fatty acid condensate for use in fast wetting-out, as a dye leveler and as a scouring agent for wool, cotton, rayon and nylon.

Aquakal "CR"
(Kali)

A complex modification of protein fatty acid condensate for use as a wetting agent for boiling-out before chlorine bleaching or in a peroxide bath. It is said to act as an excellent penetrant in some desizing baths.

Ariperm P M
(Arkansas)

Ariperm P M is a lurable type of gas fading inhibitor which may be applied in the dye-bath. In physical form, this product is a mobile liquid which produces a stable dispersion of fine particle size when mixed with water. The active ingredients of Ariperm P M are definitely substantive to acetate fibers, and when applied in suitable concentration, are said to give excellent protection from gas fumes. In many cases, a rinse with a dilute warm soap solution after the dyeing operation is advantageous. It is stated that in addition to excellent resistance to washing, Ariperm P M is also highly resistant to dry cleaning. In general, ¾ of 1% for light shades, up to 3% (on weight of goods) for heavy shades has been found satisfactory.

Atco Carbowet
(Atco)

Atco Carbowet is a specially processed alkyl aryl sulfonate designed for reducing surface tension in acid baths of all concentrations. As such it is said to be a valuable assistant in acid carbonizing of wool and in acid dyeing. Atco Carbowet is also said to be stable in the presence of salts and hard water, permitting easy rinsibility of fabrics which are processed with its aid.

It is stated that the use of Atco Carbowet in the carbonizing bath will result in easier and faster penetration of the acid into the burrs and fibers that are to be carbonized, resulting in faster production and improved carbonizing.

This material is not intended for aluminum chloride carbonizing work.

Atco Cold Scour
(Atco)

Atco Cold Scour is a solvent soap compound developed especially for the fulling and scouring of wool fabrics at reduced temperatures. This product is a viscous gel that can be easily dipped or poured from the container and will go into the solution very readily with only a few minutes boiling. This is said to eliminate the costly time-consuming process encountered when using the old-fashioned hard soap which has to be broken up, boiled for long periods, then cooled before suitable for use. It is stated that, even at high concentrations and when cold, Atco Cold Scour will produce a liquid soap insuring quick and complete penetration of the heaviest fabrics.

After scouring, a rinse temperature as low as 70°F. is said to be sufficient to remove all traces of Atco Cold Scour from the goods, resulting in further savings in steam and time in the rinsing of all fabrics.

Atco Leveller
(Atco)

Atco Leveller is an aliphatic alkene condensate and is said to be notable for its extensive range of compatibility, solubilizing action and dispersion effects. It is a neutral fluid product of amber color, stable to hard water, alkaline or acid liquors, lime, magnesium, etc., and is said to have colloidal dispersing qualities of high degree.

It is compatible with other synthetic penetrants and detergents, gums, starches, etc., with which it may be used. It is stated that it will retard and level direct, developed, acetate, acid, chrome, vat and naphthol dyes or prints. It does not produce excessive foaming. In stripping baths it functions not only as a stripping aid but prevents redeposition of the stripped color on the goods or the sides and body of the machine.

Atcolan
(Atco)

Atcolan is a synthetic surface active agent of the nonionizing class. It is a neutral, pale amber fluid, forms water white solutions and is said to be stable and effective in hard water, acid or alkaline liquors, lime, magnesium, iron or other metals and does not contain salt-forming groups. It is stated that it has excellent dispersing and cleansing properties and the closely-related values of emulsification and solubilizing effect.

An example of these functions is its use in kierboiling. It is stated that it is stable to the long-boiling process and forms no scum even on prolonged standing; in fact, it reportedly serves to prevent and disperse scum formations, and produces a cleaner, more absorbent cloth than otherwise could be made.

Atcolan is compartible with soaps, synthetic detergents and penetrants, finishes cationic or anionic, starches, etc., and in fact is said to serve to enhance the values of those products with which it may be used. It does not produce excessive foaming.

Atlapon N U
(Atlas)

A straight alkyl aryl sulfonate said to possess excellent detergency and wetting properties. It is in fine flake form and can be handled with a minimum of dusting. It is readily soluble and is stable in both acid and alkali. It is claimed that it is extremely efficient in scouring wool fibers when used in conjunction with soda ash.

Atlascour B Powder
(Atlas)

A combination alkyl aryl sulfonate and alkyl amide sulfate in a carefully balanced proportion said to provide excellent detergency, fast wetting, and good rinsibility. It is a finely dispersed powder, stable in acid and alkali, and effective in hard water. It is stated that it produces voluminous suds and that it has been proven efficient on all types of fibers.

Barisol BRM
(Dexter)

A completely new type of wetting agent and emulsifying agent. It is based on a blend of phosphated high alcohols. It is said to be particularly resistant to the action of caustic solutions. This product is recommended by the manufacturers as an assistant in vat dyeing and is a general penetrating and dispersing agent in all types of wet processing. It is not satisfactory as a mercerizing penetrant. It is a straw color thin liquid, readily soluble in cold water.

Board Cleaner
(Fancourt)

A new type of board cleaner designed to easily remove any finish or foreign matter from hosiery forms and at the same time to impart a highly polished surface to the metal. A residual wax film is left on the forms which is said to give excellent boarding properties and prevent further accumulation. It is stated that the boards are easily and quickly cleaned and that its periodic use greatly facilitates the boarding operation.

Burcon
(Burkart-Schier)

A concentrated solvent-soluble dry cleaner's soap and spotting assistant. It is diluted with four parts of Stoddard solvent for use.

Burfix B
(Burkart-Schier)

An after-treating agent for direct colors on cottons and rayons intended to improve fastness to water, damp ironing, wet crocking and perspiration. It is stated that it does not affect shades or light fastness.

Burkester 252
(Burkart-Schier)

A modified fatty ester used in softening and finishing piece goods.

Burk-Schier* Base #234
(Burkart-Schier)

A low-cost emulsifier base used in penetrants, spotters and dispersing agents with pine oil, cresylic acid and other solvents.

* Registered Trade Mark.

2-Butyl Octanol-1
(Carbide and Carbon)

A water-white liquid, suggested by the company for use as a high-temperature defoaming agent, solvent for resins in textile printing, and intermediate in the manufacture of non-ionic and anionic detergent and surface-active agents.

Cationic Light Duller
(Jersey)

A duller for rayon and acetates, whites or light shades, which is said to have a very delustering effect. It is applied on the quetsch to the dyed fabric by making a suspension of the duller in water. A 1% suspension will be sufficient in most cases, it is claimed, but the finisher will have to decide on the concentration according to the effect desired. It is compatible with cationic softeners.

Catylon #1689
(Hart)

A substantive softening agent composed of both cationic and nonionic ingredients. Catylon #1689, a cream colored firm paste, is said to combine durable maximum softness with a minimum effect on the shade and light fastness of dyed goods. This product is readily soluble in hot water forming stable opalescent solutions which are compatible with starches, dextrines, gums and other body building finishing agents.

Catylon #1689 is especially recommended by the manufacturers for softening viscose, Bemberg, acetate, cotton and mixtures of these fabrics. It is generally applied in the last rinse using ½ to 1% on the weight of the goods being processed.

Chenol #35
(Burkart-Schier)

A wetting agent, dyeing assistant and detergent for chenille textiles.

Chenol #111
(Burkart-Schier)

Said to be an extremely fast wetting agent, detergent, bleaching and dyebath assistant for chenille and general textile application. It is not affected by chlorine bleaching.

Chloropon
(Kali)

A modified protein fatty acid condensate which acts as a buffer against chlorine and alkalies in shrinkproofing wool and also in any bleaching process where chlorine or peroxide is used.

Clarapent H Special
(Atlas)

A highly concentrated, long chain condensation product. It is 100% active and is nonionic in nature. It is principally a scouring agent but it has good wetting properties. It is stated that its high concentration makes it convenient for plant dilution to any desired strength, and that it shows excellent money value against competing products.

Clarapon A
(Atlas)

A synthetic detergent of the amine type, this product has many uses in the textile field. It is highly compatible with soap and it can be used in the fulling soap to speed the action. In the washer, it is said to emulsify oil and grease, scour clean, remove odors, and wash out quickly. It also may be used in the dyebath as a levelling agent.

Clearfilm
(National Starch)

A sizing and finishing gum for rayons and mercerized cottons. It gelatinizes readily in hot water and can be applied at normal temperature. It is said to be ideal for dyeing and finishing in the same

operation and to be an excellent extender for many synthetic resin finishes.

Colgate Formula 25 (Sprayed Soap)
(Colgate)

The sprayed or bead form of this medium to low titer soap is again available for low temperature scouring and washing in textile mills. Mild, efficient, it contains 92% anhydrous soap, titer approximately 30°C. and is said to provide quicker solubility than the flake form—with good suds, excellent detergency and free rinsing.

Comco Resin M P
(Commonwealth)

A polymerized synthetic resin. Easy to apply, no special curing or baking required. Said to possess excellent resistance to laundering and dry cleaning.

Comcoterg
(Commonwealth)

A new anionic synthetic detergent with an alkyl aryl sulfonates base.

Conco Anti Fume N S
(Continental)

A gas fading inhibitor for the mangle, quetsch or padder, said to give a high resistance to gas fading acetate fabrics.

Conco Anti Fume W D
(Continental)

A substantive gas fading inhibitor applied in the dyeing process which is said to give a high degree of resistance to gas fading of acetate fabrics. It is further said to be durable to washing and dry cleaning.

Conco Color Fix J
(Continental)

A color fixing agent for direct dyes on plain dyed or printed fabrics.

Conco Non Slip S A F
(Continental)

A slip-proofing agent nonfoaming—which, it is claimed, will bind the fibers of the fabric, add weight and body without danger of stiffness or boardiness.

Conco Penetrant I N S
(Continental)

A penetrating and antifoaming agent for print pastes.

Conco Softener #99
(Continental)

An amine softener designed to impart a soft full hand on all fabrics, compatible with most other finishes and without rancidity or odor possibilities.

Dark Shade Duller C.A.
(Tex-Chem)

Dark Shade Duller C.A. is of the same type as and has similar characteristics as Light Shade Duller C.A., except that it is a darker shade and is designed to be used for dulling of dark shades without masking the dyeings.

DeCetex 104
(Dow Corning)

A new durable silicone water repellent for nylon and acetate rayon fabrics which is said to possess high initial resistance to wetting even after several dry cleanings or launderings. DeCetex 104 is easily applied from water emulsion using conventional textile finishing equipment. Only a 2 to 3% pickup is required after which the fabric is dried and cured. It is stated that no further processing, washing or neutralizing is necessary because this odorless Dow Corning Silicone contains no corrosive chemicals and is inert physiologically. Curing DeCetex 104 and thermosetting nylon fibers can be accomplished in a single operation. Fabrics treated with DeCetex 104 are said to have a soft and smooth hand, free from mark-off. DeCetex 104 is recommended by the manufacturer for all-nylon and acetate rainwear and sportswear.

Detergent E
(Drew)

A new detergent and surface-active agent which is a highly concentrated, nonsulfonated, cocoanut amide condensate. It is stated that it is used with greatest efficiency and economy in boil-off operations for removal of sizing, oil and dirt, for use after enzyme desizing, for use after print washing and soaping, and for use in all wool wet processing operations. It is said to reduce the harshening effect of vigorous scouring procedures and to have outstanding protective action, dispersing power and detersive qualities. It is an amber colored liquid that is readily soluble in water at any temperature.

Dextrol Anti-Fume R-#20
(Dexter)

An agent for improving the resistance to gas fading of dyed acetate fabrics which is said to be very powerful. The product is not fast to washing or dry cleaning. Applied as a final finish or together with other finishing agents in a pad or quetsch. Product may be used to top off the permanent type of antifume treatments to insure maximum results. It is particularly recommended by the manufacturers for use on acetate dyed goods which will be exposed in store windows before purchase. Product is said to be inexpensive and easy to use.

Dextrol Graphite Remover B
(Dexter)

A special blend of solvents, emulsifying agents and detergents. This product is especially developed for the removal of graphite on nylon lace. It may be used alone or in combination with various solvent type treatments.

Dextrol Graphite Remover RG
(Dexter)

A fatty acid amine condensation product especially developed for removal of graphite from nylon lace. Application is generally made by padding the lace through a 50% solution cold and then allowing the goods to stand for a short time until the graphite is loosened. Scouring is then carried on in the regular manner. Special formulations have been developed for this product for particular plant setups.

Di(2-Ethylhexyl) Maleate
(Carbide and Carbon)

A water-white liquid, whose addition product with sodium bisulfiate is an anionic surface-active agent.

Diastafor D
(Standard Brands)

A dry enzyme product for desizing, containing 4,000 liquefons per gram.

Diastafor Type LC
(Standard Brands)

A liquid enzyme product for desizing, containing 2,000 liquefons per gram.

Diotrene "T"
(Laurel)

A combined nonionic and alkyl aryl sulfonate said to possess good detergent and wetting qualities. It is recommended by the manufacturers for use on cotton and mixed fibers for scouring and penetrating.

Dispersall N
(Royce)

A nonionic dispersing agent used as a retardant in vat dyeing and printing and in naphthol dyeing and printing. It is said to be a good stripping assistant for vat and naphthol colors with hydrosulfite (Vatrolite) and caustic soda. It is stated that the product is neutral, stable and odorless and that it resists the action of the salts present in hard water.

Du Pont Retarder LAN
(Du Pont)

A cationic surface-active agent in the form of a tan paste, operative in acid and electrolyte solutions. Suggested uses include dye-retarding agent and stripping agent.

Durable Non-Pigmented Duller

(Jersey)

This finish contains no pigment and consequently no adhesive to attach the pigment to the rayon fiber. It is claimed that this results in a fabric with much less alteration of the hand. It is further claimed, that, once the finish has been plied and the fabric dried, the delustering effect will be found durable and resistant to both water and dry cleaning solvents. It is applicable not only to whites and pastels but also to dark colors and blacks.

Durable Resin Finish

(Jersey)

A resin emulsion which is said to give a fabric a durably stiff finish.

Dypenol #2-R

(Dexter)

A new noncresylic mercerizing penetrant. Product is soluble in caustic strengths up to 60° Twaddle and is completely soluble in water. Product is yellow liquid. It is claimed that it shows least foaming of any noncresylic penetrant so far tested. Product does not break down on standing in the caustic. Recommended by the manufacturers for regular mercerizing procedures where cresylic acid and other toxic materials must be avoided.

Dypenol #3-R

(Dexter)

A new type of noncresylic wetting agent. Shows more foaming than Dypenol #2-R but has a somewhat better solubility. This product is recommended by the manufacturers for mercerizing caustics of 30° to 50° Twaddle. It is stated that it is to be preferred over cresylic types under conditions where workmen have shown a sensitivity to cresylics or where there has been an objection to the odor of cresylic type products.

Economite Detergent

(Paulden)

A modified sulfonated fatty amide in a white paste form, it is an all purpose synthetic organic detergent said to be unaffected by acids, alkalis, or hard water as encountered in the textile industry.

It is stated that Economite Detergent has found widespread use as an assistant in scouring and dyeing in jigs, padders, and dye becks. When used as an assistant in dyeing, economite detergent is said to produce voluminous rich suds which do not break down when salt is added or if the dyeing is conducted at the boil. Because of its detergent and wetting properties economite detergent is said to be very effective in obtaining good penetration in the dyeing of cotton yarns and fabrics.

Emulser O P

(Arkansas)

Emulser O P may be described as an emulsifying agent with detergent properties, and its outstanding use is in connection with the processing of wool tops for removal of excess oil. It is stated that its chief advantage is that the dyeing may be carried out in the same bath following such processing, with excellent results. Emulser O P is a liquid of oily consistency and is readily dispersible in water. The fact that it contains 100% of active ingredients is said to make its use highly economical, since in most cases ¼-½% on the weight of wool together with about 1% of aqua ammonia is sufficient for satisfactory results.

Emulsion C-4

(Laurel)

A blended vegetable oil product with hydrocarbons which is said to have excellent lubricating qualities. It is recommended by the manufacturers for winding and softening cotton and mixed yarns.

Estramine 95

(Onyx)

A special fatty acid alkanolamine condensate said to possess good wetting, foaming, and detergent characteristics. Especially designed for scouring and detergent applications where low cost is essential.

Eulan N K

(General)

An efficient mothproofing compound which has strong affinity from a neutral bath for wool and other animal fibers. It is stated that, due to this affinity it is very fast to water in contradistinction to the silicofluorides frequently used for mothproofing. Eulan NK is also said to be fast to repeated dry cleanings.

Fabrez F 10

(Atco)

Fabrez is the name for a group of fabric-treating resins manufactured by Reichhold Chemicals, Inc., and distributed by Atlantic Chemical Co., Inc., of Centredale, Rhode Island.

Fabrez F 10 is a very low polymer urea formaldehyle resin in the form of a soft pure white paste which dissolves readily to a neutral, clear solution. It is especially designed as a permanent stabilizing and wrinkle resisting finish for spun rayon fabrics, certain cotton fabrics and blended fabrics of spun rayon with wool cotton, linen, acetate and nylon.

It is likewise used to obtain permanent glazed chintz and calendered embossed finishes, and in textile printing to produce glazed designs, seersucker and two-toned color effects.

Fabrez F 12

(Atco)

Fabrez F 12 is a highly polymerized urea formaldehyde resin that is said to impart durable shrinkage control, fullness of hand and springiness to filament rayon, spun rayon, spun rayon blends, and cotton fabrics. It is not a crease-proofing resin but is recommended for use with that type where more fullness is desired along with resiliency. It also has a tendency to increase abrasion resistance of anticreased fabrics.

It is a clear amber liquid that dissolves immediately in cold water and is said to be stable for several weeks under normal plant conditions. It has practically no odor and does not develop color on white fabrics. Fabrez F 12 can be mixed with starches, finishing gums and softeners. It is stated that this resin is so highly polymerized that its large molecular size will not penetrate the fiber, and it remains on the surface as a semi-continuous film.

Fabrez F 14

(Atco)

Fabrez F 14 is a highly polymerized urea formaldehyde resin recommended by the manufacturers as a very economical, durable shrinkage control finish with good crispness and fullness of hand at low concentrations. It adds more crispness than Fabrez F 12 with much less material. It is often used with Fabrez F-10 to supplement the crease-resistant finish. It can be applied to pigmented taffetas in conjunction with gum arabic to impart a thin, springy finish.

Fabrez F 14 is a semi-viscous, translucent amber solution, dispersible in water at all temperatures and said to be stable for many weeks under normal plant conditions. It does not penetrate into fabrics but coats the surface, giving a satisfactory finish with very low solids.

Fabrez F 50

(Atco)

Fabrez F 50 is a water-soluble alkyd resin developed for the finishing of acetate rayon piece goods. It contains 50% solids and is said to be completely soluble in water at all concentrations and at any temperature. The film formed by Fabrez F 50 is clear and transparent so there is no dulling of luster and no mark-off.

It is stated that Fabrez F 50 will impart a full, flexible hand to acetate rayons and also prevent slippage. It has proved especially effective as an acetate satin ribbon finish. It should be applied in a neutral or slightly alkaline bath.

Fanco Nylub
(Fancourt)

A highly dispersible aqueous soluble lubricant applied in the trough for conditioning and lubricating nylon yarn previous to knitting. It is stated that Nylub is effective on both the mono and multifilament nylon yarns, and its use eliminates separate treatment when both types of yarn are used to knit hosiery.

Farilon
(National Starch)

A heavy-cooking, colorless starch product, which is said to form a paste of extremely smooth, slow-congealing texture with good film-forming properties. It is highly recommended by the manufacturers for warp sizing cotton, worsted and spun rayon yarn, for roller machine or screen printing, and, in combination with talc, China clay and other fillers, for heavy pure finishes and for backfilling.

Finish 500
(Tex-Chem)

A new light-colored finish easily soluble in water and compatible with other finishes such as resins, cation softeners, etc. It is suggested for use on spuns and blends to get a nice, round, full and crisp hand.

Finish CL-1656-89
(Burkart-Schier)

A general purpose softener and finish which is said to impart an extremely soft hand to cotton and rayon textiles. It is effective on nylon fabrics as well. It is particularly well suited for finishing tricot goods.

Flake Formaldehyde
(Celanese)

A new, nondusting flake paraformaldehyde, this product is said to offer improved water solubility and reactivity. It can therefore be economically incorporated in applications formerly using formalin or demanding low water content.

Appearance—Hard, pulverable flakes
Color—White
Formaldehyde Content—91% minimum
Acidity—0.05% max. as formic
Ash—0.01% max.

Flameproofing Liquid
(Jersey)

Especially intended for the flameproofing of heavy fabrics including pile fabric. It is stated that, because of the rapidity and thoroughness with which the liquid penetrates the entire material, it is especially good for cotton fabrics with a woolen pile. The pH of the liquid is approximately 6, but upon drying will leave no residual acidity in the fabric, it is claimed. One part of the liquid is diluted with two parts of water and applied to the fabric on the quetsch. 100% pickup is claimed. After application the fabric is dried at 225 to 250°F.

Flotex
(National Starch)

A colorless, clear-cooking starch derivative which gelatinizes to a heavy-bodied, smooth, nonjelling paste. Flotex thickeners are said to have very good stability in the presence of acids, alkalis and other chemicals used in textile printing. It is recommended by the manufacturers for roller machine and screen printing and has been found ideal with a number of types of dyestuffs. It may also be used in white discharge printing, caustic plissé printing, gum rollers and peroxide padding.

Formaset* SN
(Warwick)

A stabilized urea formaldehyde condensate for use on cellulosic fabrics to impart crease resistance and dimensional stability. This product contains approximately 60% active material and is supplied in the form of a smooth white paste. It dissolves readily in warm water to form perfectly clear solutions.

* Reg. U. S. Pat. Office.

Fulgayne 270
(Burkart-Schier)

A low-cost filling and weighting agent primarily intended for piece goods application. It is stated that it yields a good hand with high weight increase, that it has no hygroscopic effect and that it is compatible with standard finishing agents.

Graphflex
(Arkansas)

Graphflex is a formulation specifically developed to remove graphite marks and stains from nylon lace and other fabrics. It is ordinarily used in full strength and a set of heavy squeeze rolls is quite essential for its successful use. In consistency, Graphflex is a soft paste and is composed of a combination of detergents and emulsifying agents which remove the particles of graphite from the fibers and hold them firmly in suspension. In some cases, a light bleaching following the Graphflex treatment is desirable in order to obtain maximum whiteness.

#168 Griptex
(Adhesive)

A liquid rubber plastic compound for rugs and carpets. It is said to make rugs skidproof and prevent fraying. It is stated that it withstands washing and dry cleaning. Commercially available.

Hartex Duopol
(Hart)

A highly sulfated synthetic ester blended with pine oil which is said to possess excellent wetting-out action and good dyeleveling properties. Hartex Duopol is a concentrated liquid product miscible with water in all proportions giving clear solutions which are completely stable to hard water, salt and weak alkalies and acids.

Duopol is said to be used extensively wherever superior wetting-out and dyeleveling action are required. It is recommended by the manufacturers as an assistant for vat or pad dyeing, for package dyeing and for dyeing operations in general to give greater uniformity of shade. Added to printing pastes, it is said to improve penetration and give greater fastness to soaping. Duopol finds frequent use also in wetting out tubular knit goods in order to sink them prior to the boil-off operation.

Hartex Fiberlock
(Hart)

An antislip finishing material in the form of a viscous light amber colored oil, Hartex Fiberlock is said to give excellent antislip properties and impart a very desirable thick, full-bodied, weighted hand without stiffness or harshness to all types of fabrics. It is stated that this product causes no effect on the light fastness of dyestuffs, no dulling of dyed goods, no rancidity or deterioration on aging and no discoloration on can drying. Fiberlock is readily soluble in cold water and can be used with the usual finishing agents such as sulfonated oils, soluble waxes, gums, softening agents and the like.

Hartex Finish #1682
(Hart)

A viscous, flowing gel, consisting of a specially treated gum solution, used as an anticurl and binder for weighters in finishing tubular cotton knit goods. Hartex Finish #1682 is very soluble in warm water, is compatible with softeners and sulfonated oils and can be used in weighter solutions as strong as 60%. This gum requires no cooking and does not produce excess firmness. The use of Finish #1682 minimizes the tendency of the weighter salts to mark-off on colored fabrics by effectively binding the weighter to the fabric.

Hartex Print Gum
(Hart)

A viscous, highly concentrated synthetic gum in the form of an amber colored gel. Hartex Print Gum is recommended by the manufacturers for roller and screen printing on rayon, acetate, nylon, spun rayon, and cotton fabrics. It has found wide use also for discharge printing and for printing vat colors. Hartex Print Gum is said to replace the less concentrated natural gum preparations giving better color yield, sharper detail and increased

rinsibility at lower cost. For most types of printing, this concentrated gum can be diluted as much as 5:1 with water. Hartex Print Gum is stable to storage and to the various chemicals used for textile printing.

Harto-Resin KS
(Hart)

A new type of resin for permanent shrinkage control and crush resistance, containing no urea or melamine. Harto-Resin KS is a clear water-white concentrated liquid resin having a storage life of about 6 months. This resin is recommended by the manufacturers for use on regenerated cellulose as well as cotton fabrics. It is claimed that fabrics treated with Harto-Resin KS cannot retain chlorine regardless of the number of launderings and bleachings, and does not give rise to amine or fishy odors under any conditions. Harto-Resin KS requires a cure with a catalyst at around 300°F. whereupon it is said to be permanently fixed, giving shrinkage stabilization for the life of the fabric.

Harto-Resin Paste CR
(Hart)

A urea-formaldehyde condensation product principally used for permanent crush proofing of spun rayon, cotton and mixtures of spun rayon with cotton, nylon, wool, acetate and linen. Harto-Resin Paste CR is a low polymer resin in the form of a white opaque paste. It is stable to storage for several months and is said to show excellent compatibility with softening agents sometimes used with crushproof resins. It is stated that fabrics treated with Harto-Resin Paste CR show decreased water absorbency and moisture regain, increased wet strength and increased fastness to washing of many dyestuffs.

Harto-Resin SL
(Hart)

A urea formaldehyde type of resin in liquid form principally used for shrink proofing spun rayon, cotton and mixtures of spun rayon with cotton, nylon, wool, acetate and linen. It is said that Harto-Resin SL is used also to obtain special bodied hands of excellent durability, for reducing slippage, for binding pigments, for processing durable glazed chintz, and for modifying the hand obtained with the crush-proofing finish, Harto-Resin Paste CR. Harto-Resin SL is a clear water-white viscose liquid possessing long storage stability and complete miscibility with water. This resin is used as a permanent finish by curing it with a catalyst or it may be used without curing as a finishing agent to produce a bodied hand.

3-Heptyl "Cellosolve"* and 3-Heptyl "Carbitol"*
(Carbide and Carbon)

The 3-heptyl ethers ethylene glycol and diethylene glycol, respectively. They are water-white liquids that reportedly undergo the normal reactions of glycol ethers. They are suggested by the company for use as coupling and antifoaming agents.

* Trade Mark.

Hydro-Flakes #74
(National Starch)

A cream-colored, tacky, fast-setting, cold water swelling adhesive used in printing to hold the fabric to be printed to the back-gray. Its use is said to eliminate the tendency to "pull in", to become distorted, or to curl the selvedges when printing sheer, sleazy or loosely constructed fabrics. It is readily removed from the printed fabric in the soaping operation.

Hydroxy Resin P-30-2
(Kali)

A stable aqueous resin dispersion of a fully polymerized resin which is used as a low temperature curing resin and produces a finish on fabrics which, it is stated, will stand a number of washings.

Hyd. Watershield #11-F
(Kali)

A wax metallic salt type with special base for use as a water repellent, which is said to be more permanent than the usual wax aluminum type. It may be used on cotton, rayon, acetate and particularly on wool due to its low temperature working range of 110 to 120°F.

Impregnole* LV
(Warwick)

A nonfoaming wax emulsion type water repellent compound; may be applied to most fabrics in a single bath application to impart a high degree of water repellency. It is supplied in the form of a white liquid emulsion which disperses readily in hot water.

* Reg. U. S. Pat. Office.

Isobutyl Alcohol
(Celanese)

Now available in commercial quantities, isobutanol is recommended by the manufacturers for many uses, such as solvent and chemical intermediates formerly utilizing the more well-known n-butanol. In such applications, isobutanol generally is said to exhibit superior properties and less toxicity.

Molecular Weight	74.12
Specific Gravity	805
Melting Point	—108°C.
Boiling Point	107-108

Kalamine "S"
(Kali)

A fatty acid diamine cationic condensate for use as a cationic softener.

Kalepon
(Kali)

A protein, fatty acid condensate for use as a detergent and in leveling, penetration, dyeing, scouring and to promote lime stability.

Kalepon "W"
(Kali)

A degradation product of albumin for use as a protective colloid and leveling agent. It acts as a buffer against acids and alkalies in scouring and dyeing or stripping wool or in dyeing of metallized colors.

Katapol K Conc.
(General)

A synthetic surface-active agent possessing cleansing, wetting, dispersing and level-dyeing properties. It differs from most surface-active products in being cationic-active.

"Ketosol"* Solvents 25 and 75
(Carbide and Carbon)

Mixtures of acetophenone and phenyl methyl carbinol containing approximately 25 and 75 per cent by weight phenyl methyl carbinol, respectively. Their physical properties are said to be intermediate between those of the two components. They are suggested by the company for use as solvents for textile dyestuffs and as swelling agents for cellulose acetate rayon.

* Trade Mark.

Laureltex #10
(Laurel)

A blended synthetic detergent said to possess excellent scouring and wetting qualities. It is further said to give excellent results on all type fabrics.

Light Shade Duller C A
(Tex-Chem)

A light shade duller for delustering white and light shades. It is a medium thickness smooth white cream easily dispersed in warm water. It is compatible with practically all other finishes such as weighter finishes, etc. and can be used in combination. It is said to give excellent dulling and a beautiful soft hand and drape and a somewhat more permanent effect than the usual type.

Liquid Resin HV
(Onyx)

A highly condensed urea-formaldehyde liquid resin for imparting special stiffening effects such as taffetarizing organdy and marquisette finishes.

Manganol NF
(Dexter)

Identical in all respects with MANGANOL ZS with the exception that a special antifoaming agent has been added in order to reduce the foam of this type of product. It is said to be particularly unusual in that the foam at high temperatures is not great. Wetting powers are unimpaired by the lack of foaming.

Manganol ZS
(Dexter)

A liquid wetting agent of the alkyl aryl sulfonate type said to be of extremely high speed. Product is an all around wetting agent. It is said to be resistant to the action of acid and alkali. This product is being successfully used as a wetting out agent and assistant in the dyeing of package yarns of cotton and rayon. The product is also being successfully used in the dyeing of wool. In carbonizing it is stated that it has been found particularly useful with a small amount being quite satisfactory. It is stated that it shows some foaming in solution but no more than competitive products. It is not recommended as a detergent. Product is said to be outstanding in the high degree or wetting available at a very low cost.

Marcanol C-30
(Maher)

A new liquid synthetic detergent of the alkyl aryl sulfonate type. A clear solution which is completely stable in acid and alkaline solutions. Said to give high lather and have excellent detergency properties.

Marco Defoamer WSC
(Maher)

Defoaming agent for textile processing. It is stated that it has been found to be effective in small concentrations at all temperatures, that it is pleasant in odor and that it will not decompose or precipitate after extensive boiling.

Marco Resin WP
(Maher)

A semipermanent synthetic resin in emulsion form for impregnating textile fibers. Said to impart water and spot resistance characteristics to the cloth, increase the "hand," and improve the body.

Marco Wool Oil
(Maher)

A new balanced wool oil said to produce extremely stable emulsions in all types of water.

Marcowet PD Supra
(Maher)

A surface active agent which is said to have extremely fast wetting and penetrating properties. A 0.05% solution is said to give a wetting time of less than 20 seconds @ 25°C. by the Draves test.

Metasol
(Burkart-Schier)

A new, improved product which is a more suitable form of this standard textile auxiliary.

Methacrolein
(Carbide and Carbon)

A water-white liquid containing an active double bond and a carbonyl group. They may be reacted independently or simultaneously to form a variety of products, the company states. Methacrolein is suggested by C. and C. for investigation in the modification of cellulosic materials and for the synthesis of coupling agents, dyeing assistants, and resins.

Methyl, Ethyl, and Butyl Acrylates
(Carbide and Carbon)

Chemically active compounds claimed to polymerize readily and copolymerize with monomers such as methacrylate esters, vinyl chloride, styrene, and vinyl acetate. They also are said to react with alcohols, halogens, mercaptans, and compounds containing active hydrogen atoms. Their polymerization products are reported useful as crushproofing, shrinkproofing, and sizing agents.

Mixed Decanols
(Carbide and Carbon)

A mixture of C-10 alcohols composed chiefly of 2-ethyl octanol-1 and 2-butyl hexanol-1 together with a trace of secondary alcohols. These primary alcohols are said to react with ethylene oxide to yield surface-active agents of the non-ionic type. They are also said to react with chlor sulfonic acid to produce anionic wetting and penetrating agents. Mixed Deconols are suggested by the company for high-temperature defoaming and as solvents for resins in textile printing.

Monsol Wax
(Jersey)

A water-soluble wax for use where a wax finish is required. This wax has been prepared in a form which makes possible its solution in water at room temperature. The wax is added to 5 to 10 parts of water at this temperature and the mixture agitated without heating for a short time, until the wax is completely dispersed or dissolved.

Neufume DMH
(Onyx)

A paste which is readily dispersible in warm water, developed for use in the dye bath for application to acetate fabrics to inhibit atmospheric gas fading.

Neutrol
(Fanzourt)

Neutrol is a new neutral dye assistant designed to disperse dyestuffs. It is particularly useful in the dyeing of nylon hose with acetate colors. Its use is recommended by the manufacturers to obtain good unions between 15 denier monofilament and the multifilament yarns.

Neutronyx 600
(Onyx)

An odorless liquid nonionic surface-active agent which is said to exhibit superior wetting, foaming, detergent and dye-leveling characteristics. It is stated that it is applicable in acid and alkaline media and in hard water, is 100% active and does not decompose during long storage periods. Primarily, Neutronyx 600 is a detergent and is widely used on woolen fabrics, fine fabrics and cottons; also for industrial applications such as for washing dishes, glassware, automobiles, metals, painted surfaces, floors, walls, etc.

Nilaton Finish R
(Commonwealth)

A new synthetic resin for finishing nylon hosiery. It is said to impart exceptional full body and snag resistance.

Nonyl "Cellosolve"* and Nonyl "Carbitol"*
(Carbide and Carbon)

The 2,6-dimethylheptyl ethers of ethylene glycol and diethylene glycol, respectively. Water-white liquids, they are suggested by the company for use as coupling and antifoaming agents.

* Trade Mark.

Nopco* 1656-R
(Nopco)

(U. S. Pat. 2,207,256; 2,285,357; Re. 21,530)—New antistatic lubricant specially developed to assure quality worsted production. Fibers treated with Nopco 1656-R are said to remain static-free during carding, gilling, combing, drawing, spinning and warping. It is stated that it also increases the breaking strength of yarn and scours freely using 75% or less soap or detergent. The product may be applied in any of the conventional wool lubricating methods though best results are said to be obtained when it is used in the early stages of processing. Its exceptional static killing properties make it the ideal lubricant for fibers to be processed on the new type pin drafters.

* Reg. U. S. Pat. Off.

Nu-Fab Fabric Paint
(Adhesive)

Available in 11 colors, black and white. An improved formula is said to make streaking impossible. It is recommended by the manufacturers for convertible auto tops, outdoor furniture, umbrellas, cushions, awnings, tents and lampshades.

Nyloil #533
(Richmond)

An oil specifically designed to be used in knitting 10 and 15 denier monofilament nylon yarns. It is stated that it contains a gum-free wax that will not leave a deposit on the eyelets, needles, sinkers or dividers, but will give a greater stiffness to the stocking. It is said to reduce snarling, give more even lengths and reduce the number of pull threads and snags. It may be used in the knitting of full fashioned or seamless hosiery.

Nylon Oil D279
(Fancourt)

A new special oil for lubricating nylon yarn on full fashion or seamless hosiery machines to help prevent pull threads and pick-ups. It is stated that the oil is used straight without water or emulsifying products, and that the percentage of seconds and irregulars is greatly reduced by its application.

Nyltex G
(Richmond)

A trough solution, designed to give excellent lubrication for both monofilament and multifilament nylon yarn, which is said to result in longer life of needles, sinkers and carrier tubes. It is claimed that it eliminates the formation of scum in the troughs by combatting the most unfavorable conditions in humidity and variation of size and coning oils. It is said to prevent the nylon from stocking and keeps stripping to a minimum. This is a new type of synthetic with volume-forming properties containing a rust inhibitor. It will not deposit solid matter on the splash pans.

Nytron*
(Solvay)

Nytron is a synthetic wetting agent-detergent of a distinct new type: a complex mixture of sulfonated ketones, amines and alkyl sulfonates. Manufactured by a special process, developed and patented by Solvay, Nytron is said to be unique in the synthetic organic detergent field.

In addition to the usual properties of wetting, penetration, emulsification, and reduction of surface tension, which are common to the synthetics, Nytron claims exceptional detergency, unusually high resistance to hard water, a unique range of solubility, and uncommon chemical stability.

Since Nytron can be used alone or in combination with strong acids or alkalis to increase their general effectiveness, this product is reported to be applicable in a wide variety of textile operations.

* Trademark Reg. U. S. Pat. Office.

Olamine "W"
(Laurel)

A cation active softener which is very light in color. It is used for softening and finishing cotton and mixed fibers.

Olitex 6-B
(Laurel)

A sulfonated low titred vegetable oil which is recommended by the manufacturers as a softener and finishing agent. It is said to be especially adapted in the finishing of cotton and rayon piece goods and as a Sanforizing oil.

Onyxol 9162
(Onyx)

A fatty acid alkanolamine condensate said to possess excellent wetting, foaming and detergent characteristics. It is particularly recommended by the manufacturers for wool scouring and other textile processing operations.

Orvus Neutral Granules
(Procter & Gamble)

Orvus Neutral Granules, a modified alkyl aryl sulfonate type product, is the latest addition to Procter & Gamble's line of synthetic detergents. It is in the form of a snow white, dustless, free flowing granule and is practically odorless. It is said to exhibit excellent wetting-out and penetrating characteristics as well as efficient emulsifying, sudsing, and scouring performance in hard, soft, and salt water. Orvus is chemically stable under alkaline or acid conditions as well as in the presence of metallic salts. It is stated that it is not affected by atmospheric conditions, exposure, or aging; hence, will not turn rancid or oxidize to develop objectionable odors. Orvus is also stable in the presence of oxidizing and reducing agents.

It is stated that Orvus Neutral Granules are being used successfully by many leading textile manufacturers for scouring and dyeing all types of cotton, wool, rayon, and nylon fabrics.

Over-Spray #2
(Paisley)

A moisture-free solution applied by hand or power vaporizer at the loom to ease thru normally static nylon warps. Said to prevent fraying of ends or skinbacks.

Palabond R
(Paulden)

A water soluble resin which is a thick light amber colored oil. Highly recommended by the manufacturers as a nonslip finish on rayon and acetates, particularly the latter. 10% applied on acetates is said to be sufficient to impart nonslip without making material "boardy". If increased body is required, the addition of Palabond 400 or a starch type weighter rather than gums, is recommended.

Palabond 400
(Paulden)

An amber colored gel, widely used as a nonslip finish. It is said to be particularly light in color due to the high quality of raw materials used in its manufacture. Also used to build up hand on low cost fabrics. If a softer hand is required, the addition of Palabond R to finish solution is recommended.

Palacream Resin
(Paulden)

A modified urea formaldehyde resin paste said to be widely used to produce a crush proof finish on rayon and acetate fabrics.

Palacream resin is said to be extremely stable even in hot weather. It is also said to be free from any formaldehyde odor. Palacream resin is readily soluble and compatable with most other finishes. It is said to be well known for its uniformity.

A 50% stock solution remains clearly soluble at room temperature for long periods of time.

Palafix 866
(Paulden)

A liquid nonionic dye fixing agent. It is applied in the last rinse at 160°F. for about 20 minutes. It is stated that goods so treated do not bleed in cold water or sea water and are perspiration proof. Migration of colors during drying or staining of cross dyes may be prevented by treating the goods with Palafix 866. Palafix 866 does not effect shades or light fastness.

Palafix Softener
(Paulden)

A white paste, which is a cationic dye fix possessing softening properties. When applied in the last rinse of a print wash, it is said to prevent subsequent mark-off. For fabrics printed with direct colors, Palafix Softener may be applied at temperatures up to about 100° F. It is stated that goods treated with Palafix Softener do not bleed in cold water or sea water and are perspiration prof.

Palamine 655
(Paulden)

A cationic softener effective on rayon acetate and cotton for producing a soft spongy hand. It is said to produce a full hand. Palamine 655 has little effect upon shades.

Palamine Conditioner
(Paulden)

A combination detergent and softener. It may be used either as an assistant in scouring or as a softener in the finishing bath. Claimed to be excellent as a boil-off compound for ply yarn fabrics or as a

softener compatible with gums and dullers. It is stated that it does not discolor whites and will not impart a rancid odor to goods either when they are stored in a humid atmosphere for prolonged periods.

Palamine E
(Paulden)

A cationic softener which is said to impart an extremely soft and suede-like hand to rayon, acetates and cottons.

Palamine Softener
(Paulden)

A cationic softener. It is stated that it produces a soft dry hand and does not yellow whites even when goods treated with palamine softener are subjected to high temperatures.

Palamine Softener is said to have little effect upon shades and the light fastness of dyes.

Palamite NB
(Paulden)

A nonionic detergent possessing softening properties. It is a brown oil which is readily dispersible. It is said to possess excellent dispersing properties toward acetate dyestuffs.

Palapene 100
(Paulden)

A synthetic wetting-out agent, specifically, a sulfonated ester in the form of a white pasty liquid. Said to have outstanding money value when used for wetting out, particularly at temperatures of 140°F. or lower.

Palaperm Waterproofer
(Paulden)

A brown wax synthetic permanent water-proofer. Goods treated with Palaperm Waterproofer are said to have excellent spray ratings.

Palawax Veridry
(Paulden)

An emulsified wax type of waterproofer in a white gel form, highly concentrated. It is claimed that 3% will, in most cases, give a very high spray rating.

Palex Penetrator
(Paulden)

A sulfonated synthetic ester for use as a wetting agent. Because of its rewetting properties, Palex Penetrator is most effective when used as a finish for sanforized fabrics. It is stated that Palex Penetrator does not retard exhaustion of the dyestuff in the dye-bath, yet it greatly aids penetration and promotes levelness. It is said to be widely used as a dispersing agent to paste up acetate dyes because of its solvent action on this class of dyestuff.

Palex Resin 44
(Paulden)

A urea formaldehyde resin syrup. It is used to produce various types of finishes, alone or in combination with other finishes. It is said to aid in producing a shrink proof finish on rayon and acetate fabrics and build up goods without marking off. Goods treated with Palex Resin may either be just dried or dried and cured.

Palkelate
(Paulden)

An organic chelating agent that possesses metal sequestering properties. It is stated that it may be used as a water softening agent under extreme conditions as it does not break down when boiled for long periods of time. It may be used in strongly acid or alkaline mediums.

Palscour 173
(Paulden)

A heavy white paste detergent compounded specifically for scouring rayon and acetate goods in jigs or dye becks. It is claimed that it has a desizing action on warp sizes and excellent detergent properties so that goods scoured with Palscour 173 can be readily dyed uniformly.

Palsope
(Paulden)

A combination synthetic detergent and low titer soap in jelly form. Recommended by the manufacturers for use where a quick rising soap is indicated. Said to be resistant to alkalis, slight hard water, and acid conditions.

Paramel G
(Arkansas)

Paramel G is an anionic softener with substantive properties which is said to produce a full mellow hand on rayon fabrics. In consistency, it is a firm white paste which is readily dispersible in hot water and alkaline in reaction. The use of Paramel G is said to avoid many of the disadvantages of the cationic finishes in that its effect on shade and light fastness of dyes is practically nil. Another of the outstanding properties of this product is said to be its high degree of resistance to yellowing and rancidity under severe conditions.

Parnol
(Jacques Wolf)

An alkyl aryl sulfonate, principally sodium salt of dodecyl toluene sulfonate, active matter 41% plus. This is a spray dried, free flowing, white powder with little or no odor which is said to be stable in usual acid and alkaline solutions and to have exceptional wetting properties and high detergent powers.

Penetra-Set "S"
(Paisley)

For application in a specially constructed Amco Atomizer Process attached to H&W and Lydon Steamers for conditioning of yarns. It is said to deaden liveliness, preventing quilled yarn from sloughing off or kinking during weaving in high pick speed looms. Penetra-Set "S" is another concentrate of the Paisley line and contains no added water.

Perma Par ACA-100
(Refined)

A fatty acid-amine condensate, containing no water or inert material. Its aqueous solution has a pH of about 8.5 and possesses cation active properties. Used as a finish, it is said to exhaust completely from either a long or short bath. It is stated that it imparts a soft, mellow hand to the fabric and has a minimum effect on the shade and light fastness of direct colors. Since it is of alkaline nature it can be used as a gas fading inhibitor for acetate colors. It will not oxidize or go rancid either in storage or on the cloth.

Polyco 319
(American Polymer)

A free-flowing acrylic copolymer dispersion characterized by an exceptionally fine particle size. Deposits a continuous, tough, clear, elastomeric, waterproof film with good low temperature flexibility. Absence of plasticizer or oxidizable components is said to result in excellent aging and weathering characteristics.

Suggested uses: Pigment binder for leather finishing; emulsion paint base; paper impregnant; binder for clays, pigment, talc in weighting finishes; sizes for all types of fabrics.

Concentration 40%; pH 4-5, also available with pH 7-8 and in hard and soft grades; Viscosity 5-10 cps.

Commercially available.

Polyco 337XS
(American Polymer)

A stable aqueous resin dispersion specifically formulated to impart a permanent launder and dry cleaning finish to textiles, particularly cottons.

Suggested uses: To increase retention of stiffness through repeated launderings; to prevent discoloration on exposure to light; to increase abrasion and wear resistance and increase fabric strength; to impart resistance to soiling; to impart luxurious handle and surface finish.

Concentration 40%; pH 4-5; viscosity water thin.

Commercially available.

Polyco 350
(American Polymer)

Synthetic Latex—a stabilized dispersion of a high styrene content copolymer.

Suggested uses: Paper coatings, lamin-

ants and saturants; textile and leather finishes; a reinforcing agent for other synthetic latices; water paints.

Concentration 45%; pH 8.5-9.5; Viscosity 20 cps. at 25°C. Brookfield Viscosimeter #1 spindle at 60 RPM.

Commercially available.

Polyco 836-24
(American Polymer)

Fine particle size polyvinyl acetate copolymer emulsion, in which the particle size is of particular interest where the emulsion is to be diluted to a low solids content since the settling rate is among the lowest of any commercial polyvinyl acetate emulsion available. Deposits clear continuous film.

Suggested uses: Laminant; adhesive (both for wet combining and heat sealing); coating, saturant, textile size and binder, where color, strength, toughness and resistance to oxidation, heat, light, bacteria and age are desirable; wash resistant permanent stiffening finish for cotton and rayon.

Concentration 45%; pH 4-5; Viscosity 200 cps. at 25°C.

Commercially available.

Polyco Cold Bond (199)
(American Polymer)

A ready-to-use, quick grab, cold synthetic resin wood glue. For sale to adhesive manufacturers and distributors only.

Suggested uses: Store fixtures; table tops —formica type; kitchen cabinets; sash and doors; caskets; chairs; tables; wood pattern shops; manual training schools; boxes; silver chests; pencils.

Concentration 55%; Weight per gallon 9 lbs.

Commercially available.

Polyon
(Jersey)

A polyethylene oxide ether which is nonionic and is said to retain its activity as a surface-active agent over a wide pH range and to be extremely resistant to the presence of metallic salts. It is stated that its detergency for all fabrics is extremely good.

Printing Penetrant
(Tex-Chem)

A thin, colorless, mobile liquid which is recommended by the manufacturers as an addition to the print color to improve the penetration and evenness of the print. It is said to give an even, full, solid color, especially when used with direct, acid, or acetate colors.

Printing Pigment White
(Tex-Chem)

A white pigment dispersion for use in printing white discharges. It is a combination of colloidally dispersed white pigments of high hiding power and excellent color. Its use is recommended by the manufacturers to obtain excellent white discharges on fabrics dyed with dischargeable colors. The use of Tex-Chem Printing Pigment White is said to obviate such difficulties as specky prints, foaming in the color box, etc.

Propionaldehyde
(Celanese)

Available in commercial quantities only recently, this material has properties midway between acetaldehyde and butyraldehyde. It was the highly reactive qualities characteristic of the aldehyde group and can be used to secure modified properties in many products where other aldehydes are now used.

Molecular Weight	58.08
Melting Point	—81°C.
Boiling Point	48.8°C.
Specific Gravity	20/4°C.
Flash Point	15-19°F.

Quaker Diapene NS
(Quaker)

A newly developed slipproofing finish for acetate rayon fabrics. It does not impart a stiff or coarse hand to achieve its purpose. It is light in color with a minimized tendency to discolor white goods or throw pastel shades. It can be used in conjunction with vinyl resin emulsions to produce a firm full to crisp handle on treated fabrics. It is said to greatly minimize mark-off.

Quaker TT 3765
(Quaker)

An anionic wetting agent manufactured as a white powder. It is said to possess outstanding stability over wide ranges of pH with an unimpaired efficiency in 10% sulfuric acid solutions or 2% boiling caustic solutions. It is said to be a very good wetting agent at higher concentrations (½ to 1%). It is recommended by the manufacturers as a wetting agent for pasting up vat colors, as a wetting and dispersing agent in acid dyeing, and as a wetting agent for hard-to-penetrate vegetable matter in raw stock or piece goods carbonizing baths.

Quaker TT 4121
(Quaker)

A recently developed thermoplastic resin emulsion, anionic in character and possessing an extremely fine emulsion particle size. It is stated that, when applied to synthetic fabrics, particularly acetate rayon fabrics, it seems to give considerable crispness due to deep penetration of its resin. The product forms stable emulsions and disperses instantly in water.

Rapidase M
(Wallerstein)

A new medium-priced standardization of the amylolytic, enzymatic desizing agent, this product for the desizing of cottons, rayons, acetates and mixed goods, is said to provide good value in completing the Rapidase line of desizing preparations.

Repcol A-20
(Refined)

A solution of a fatty acid-amine condensate which is said to be stable in acid, neutral and alkaline solution. Being nonionic in nature it is resistant to the calcium and magnesium salts usually found in hard water. It is stated that it has excellent sudsing and dispersing properties at all temperatures.

Repel-O-Tex D-5
(Onyx)

This product is used with D-4 to produce a noncuring water repellent finish which is said to possess good durability to low-temperature washing of rayon and cotton fabrics and union goods.

Reselvol-25
(Morningstar)

An entirely new approach to the problem of sizing spun yarns containing 100% acetate, combinations of wool-viscose or viscose-acetate, or various blends. It is stated that it may be boiled like any starch product with no danger of losing viscosity and forms a perfectly transparent solution requiring no softeners or waxes. Reselvol-25 is said to yield maximum strength with softness and high weaving efficiency.

Resinlub
(Fancourt)

A resin emulsion used in conjunction with other resin hosiery finishes to impart lubrication for good boarding properties. It is stated that Resinlub is particularly effective when the Dunn System is used to process hosiery and that the hosiery finished with Resinlub not only possesses good boarding properties but retains its shape throughout the subsequent operations.

Resonet
(Houghton)

A new series of synthetic resin type finishes based on thermo-plastic resins. It is stated that these finishes produce a durable effect on the fabrics and will withstand a number of washings or dry cleanings, being much more durable than starch type finishes. They are compatible with, and often used with, starch finishes to impart permanent flexibility and a fuller, rounder hand than produced with starch. They are compatible with all conventional softeners, except the cation-active types. The finishes vary from a crispy, stiff finish with Resonet No. 403 (a water dispersed vinyl polymer) to Resonet No. 422 which

is said to produce an extremely soft hand, adding fullness without stiffening to any pronounced degree. Resonet No. 402 imparts no hand to the fabric but functions as an effective delustrant for bright yarns and fabrics.

Rexol #125
(Hart)

A nonionic fatty ether, recommended by the manufacturers as a general assistant in dyeing fabrics. Rexol #125 is a pale olive-colored oil possessing complete solubility in cold or hot water. Stock solutions of any strength can be prepared and stored. It is used to promote level dyeing and particularly for stripping vat dyestuffs.

Rexol #125 is said to be effective in vat dyeing in retarding the initial rate of the dyeing operation without in any way inhibiting the total color yield obtained. Thus the product is said to give the dyer excellent control over the dyeing process. It is stated that Rexol #125 is an outstanding agent for stripping vat dyeings as it assists in the removal of more color but at the time keeps the fiber bright, permitting good redyeing.

Rhonite* R-1
(Rohm & Haas)

An entirely new chemical developed specifically to impart stabilization and crush resistance to cellulosic fabrics, said to possess excellent durability providing complete washability. Rhonite R-1 is applied in the same manner and is said to require no more control than conventional UF and melamine formaldehyde resins. It is stated that it is indefinitely stable to storage at room temperature and the working life of baths after addition of catalyst is outstanding. Rhonite R-1 is readily soluble in hot or cold water in all proportions, non-volatile and application is easily controlled. Rhonite R-1 is said to be highly reactive and effective in extremely low concentrations (2 to 10%). It is compatible with other Rhonites (UF resins) and non-ionic Rhoplexes (acrylic resin dispersions) as well as cationic and anionic softeners and both durable and non-durable water repellents.

* Rhonite is a trade name mark, Reg. U. S. Patent Office.

Ribbond
(Morningstar-Paisley)

A complete process for manufacturing and finishing of artificial ribbons of continuous ends and no filling. Said to make a moisture resistant finish of great brilliancy with required pigtailing curl when used for tying candy, gift and other packages. All ingredients used are dry or moisture-free.

Richclean #532
(Richmond)

This is said to be an excellent type cleaner sold in concentrated form and designed to remove size deposits from the needles, sinkers, dividers and other parts of the machine. It is stated that it will soften the size around the needles allowing it to be carried off, as the stocking is being knit, in a soft and pliable condition so that it will not harden on the fabric and cause pull threads and snags. It is further stated that it will not cause the stockings to stick after being tied together in bundles, that it will not in any way affect the metal parts of the hosiery machine, and that it helps to polish the needles and leaves a little film on the clean parts.

Richonic
(Richmond)

A nonionic compound which is said to have tremendous scouring properties. It is stated that is is a very effective material for the removal of oil, that it does not break at the boil or in acid or alkali, that it is exceptionally effective in scouring out "floor dirt", and that it can be used to scour wool, worsted, acetates and rayons.

Sandozin W
(Sandoz)

A nonionic compound reported by the manufacturer to have unusual dispersing properties as well as possessing exceptional softening properties in dyeing as well as in resin treatment.

It is also reported that it acts as a wetting and dispersing agent for both dyestuffs and enzyme in the pad, and materially speeds wetting of size and subsequent de-sizing action without detrimental effect on the enzyme.

Sapamine FLK
(Ciba)

A new and effective anionic softener for both cellulose and protein fibers. Sapamine FLK is particularly recommended by the manufacturers for use in a direct or acetate color dyebath to prevent the goods from becoming stiff and boardy and developing cracks and streaks in dyeing.

Scourtex
(Richmond)

A new synthetic scouring and leveling agent. It is anionic in nature but is said to be unique in the fact that it may be used in an acid or alkaline medium. It is stated that it will work equally well in hard or soft water and will not break with heat. It is further stated that it is effective in scouring out spinning oil, tanning oil or any other type of oil and leaves the fabric open and receptive to level dyeing. When used in the dyebath it is said to do an excellent job of scouring and dispersing the dyestuffs for level dyeing. It is further said to do an exceptionally fine job as a scouring agent and dyeing assistant for 15 denier monofilament and spun nylon hosiery.

Screen Table Adhesive
(National Starch)

A viscous, tacky, aqueous resin emulsion type of adhesive, which may be used as is or diluted with 5 to 10% of water. A smooth tacky surface is obtained which will remain tacky for approximately one week under steady normal use. Refresher coatings may then be applied to maintain a tacky surface.

Sellogen 0-230
(Jacques Wolf)

A synthetic tanning compound from phenol condensates used as a substitute for natural tanning extract which is said to produce good weight, full plump leather, and white color.

Service Gum
(Tex-Chem)

A new printing thickener which is said to have exceptional qualities for printing on all fabrics for both roller and screen printing and to be suitable for use with all types of dyestuffs, and especially for printing aniline blacks with which it does an outstanding job. Its use is suggested to obtain fine lines and sharp edges on prints and is said to give excellent color value, easy washing; good flow and furnishing quality in the color box. It is furnished as a thick, light colored paste which keeps its viscosity well on dilution.

Silver-Bland
(Carolina)

A softening agent compatible with acids, alkalies, weighting salts, sugars, etc.

It is said to give a full, smooth hand and added luster. Sewability is said to be excellent. When used in weighting it takes the rough feel from the cloth and stops the pick-off on drying, either by dry can or tenter frame.

Softa-Lube
(Paisley)

A concentrated throwing oil for soaking of viscose cakes or skeins. It is stated that it contains no added moisture, yields a soft hand, combines with conventional sizing products and materially assists in reducing drying time, thus preventing dehydration of yarns.

Sorolene
(Onyx)

An improved wetting agent of the sulfonated alkyl naphthalene type. It is produced in both paste and powder forms, and is active in acid solution.

Sta-Gel
(Staley)

A new starch product for warp sizing spun rayon yarns of various types as well as mixtures with other types of staple fibers, both synthetic and natural. It is prepared and applied by regular starch procedures and is said to be easily removed by ordinary desizing methods.

Standafin #1220
(Standard Chemical)

Water soluble resin. Imparts semi-durable stiff finish with high luster and no mark-off. Particularly suggested for ribbon finishes.

Stantex* #370
(Standard Chemical)

Clear soluble oil said to have good wetting, rewetting and softening properties. Especially designed as a one piece product for the pre-shrinking process.

* Trademarked.

Styrezgum-25
(Morningstar)

A new type starch base, dry spun size which, it is claimed, may be boiled without losing viscosity and produces a beautiful hand to woven fabric. It is stated that besides weaving any high sley spuns of every known blend, including 100% acetate fiber, it may be used for warp sizing of viscose filament yarns. Low shedding at the loom with high weaving efficiency and apparently no limitation to type of yarn employed are interesting features of this new product.

Substituted 1,5-Pentanediols
(Carbide and Carbon)

2-Methoxymethyl 2,4-dimethylpentanediol-1,5 and 2-ethoxymethyl 2,4-dimethylpentanediol-1,5. They are water-white liquids, reported soluble in water in all proportions. They are said to combine the chemical characteristics of glycols and glycol ethers. Their alcohol groups are primary and separated by 5 carbon atoms. They are reported useful as coupling agents and solvents for textile dyes.

Sulfanole* S Gel
(Warwick)

An ester type wetting and penetrating agent designed primarily for use in dyeing operations. The efficiency is practically unaffected by the presence of alkali or acid. It is supplied in the form of a thin, clear gel which dissolves readily in water at all temperatures to form clear solutions.

* Reg. U. S. Pat. Office.

Suntone* Clear OS 1069
(Warwick)

An emulsion binder and extender for water-in-oil pigment printing systems. High color value and good running qualities are characteristic of this material. It is supplied as a white liquid emulsion which may be readily incorporated in the usual printing formula.

* Reg. U. S. Pat. Office.

Suntone* Clear OSA
(Warwick)

A binder and extender for use in water-in-oil pigment printing systems. It has been found of particular advantage when used with naphthol and Rapidogen type colors being run in conjunction with pigments. It is supplied in the form of clear liquid material which disperses readily when incorporated in the normal printing formulas.

* Reg. U. S. Pat. Office.

Suntone* Clear OSB
(Warwick)

An emulsion binder and extender for water-in-oil pigment printing systems. High color value and good running qualities are characteristic of this material. It is supplied as a white liquid emulsion which may be readily incorporated in the usual printing formula.

* Reg. U. S. Pat. Office.

Surfax No. 1288
(Houghton)

A concentrated, highly effective wetting and rewetting agent said to have excellent dispersing and retarding properties, making it a good leveling agent for dye bath use. It is chemically classified as an aroyl sulfopropionate. It is anionic in nature. It performs best in neutral or mildly alkaline solutions at any temperature. It can be satisfactorily used in acid solutions above a pH of 5 at room temperature, but its wetting properties are destroyed in mineral acid caustic solutions at boiling temperatures. It is resistant to hard water.

Synacol 264
(Burkart-Schier)

A softening and finishing agent.

Syntholite 110-A
(Synthron)

Syntholite 110-A is a concentrated, stable, anionic paraffin emulsion used as a textile softener and lubricant and said to be especially suitable as the wax component in one-bath water repellents of the wax-alumina or wax-zirconia type. Syntholite 110-A is a moderately viscous white liquid which readily disperses in water at any temperature or concentration. It is said to provide a soft full hand, enhance luster on cotton and rayon fabrics and to be widely used as a yarn lubricant to facilitate subsequent knitting.

Syntholite 170
(Synthron)

Syntholite 170 is a concentrated liquid synthetic detergent said to be unique in its effectiveness for both detergency and wetting applications. It is used as a scouring agent at both low and high temperatures, as a penetrant in bleaching and other finishing operations, for soaping printed fabrics, in conjunction with enzymes, as a dispersing agent for pigments and dyestuffs, for soft hand in finishing, and in many other industries where detergency and emulsifying are important. It is stated that Syntholite 170 dissolves readily in cold or hot water giving clear solutions of excellent stability and is compatible with most other finishing agents.

Synthonon NF
(Synthron)

Synthonon NF is a concentrated nonionic polyethylene oxide condensation type detergent said to be characterized by maximum detergency and minimum foam. It is chemically stable to hard water, acids, alkalis, and sea water. Its wetting properties are excellent above 60°C.

It is claimed that Synthonon NF is among the most effective of the synthetic detergents, and yet it produces only a fraction of the foam produced by most anionic detergents. It is stated that its free-rinsing properties, even in cold water and lack of substantivity for all textile fibers, are of especial importance. Its ability to prevent redeposition of soil is said to be unique and to insure whiter and brighter fabrics.

Synthrez B
(Synthron)

Synthrez B is a urea formaldehyde polymer in concentrated aqueous solution. It dissolves readily in water to form clear, colorless solutions. It is used for shrinkage control, modification of hand (especially for spun rayons), durable glazing and embossing effects, and insolubilization of starch. For dimensional stabilization, it is used alone or in conjunction with Synthrez D.

Synthrez C
(Synthron)

Synthrez C is a highly polymerized modified urea formaldehyde resin syrup said to be especially economical for full-bodied durable finishes. Synthrez C is used in varying quantities to obtain durable, full bodied, or crisp finishes on all types of fabrics. It is stated that it has found wide acceptance for modifying the hand of summer suitings.

Synthrez C, when employed in glazed chintz formulations, is said to greatly reduce the requirements of more expensive resins and effect considerable savings.

Synthrez F
(Synthron)

Synthrez F is a modified urea formaldehyde polymer which is said to exhibit exceptional stability to storage. It forms clear, stable solutions in water, and is used alone or in conjunction with other Synthrez products, to modify and improve the hand of the finished fabric. It is also used for dimensional stabilization, and for insolubilization of starch.

Synthrez M
(Synthron)

Synthrez M is a dispersion of a fully polymerized resin copolymer. It is used as a moderately durable finish, which does not require curing of afterwashing. It is effective on cotton or rayon fabrics.

Tergel
(Refined)

A detergent said to be highly efficient for use on all types of spun rayons, rayon sheers, rayon crepes, pigments and bright yarn, crepes, taffetas, nylon, wool-spun rayon mixtures, acetate and acetate blends.

Tergel T
(Refined)

A detergent said to be highly efficient for use on all types of spun rayons, rayon sheers, rayon crepes, pigments and bright yarn, crepes, taffetas, nylon, wool-spun rayon mixtures, acetate and acetate blends. It contains no water or inert material and is readily soluble in water.

"Tergitol"* Dispersant TMN-650
(Carbide and Carbon)

A non-ionic surface-active agent said to weigh about 8.3 pounds per gallon and contain 100% active ingredient. At normal temperatures, it is reported semi-gelatinous in form and completely dispersible in water. It is said to be stable toward acids and alkalies and compatible with anionic, cationic, or other non-ionic surface-active agents. Used at low concentrations, it is claimed efficient as a general wetting agent and as an emulsifier for water-insoluble liquids. At ½%, it may be used as a lime-soap dispersant, the company states. It is suggested by C. and C. for use as a textile dyeing assistant.

* Trade Mark.

Tetrahydrofurfuryl Oleate
(Arnold Hoffman)

A distilled fatty acid ester possessing low acidity and volatility. Recommended by the manufacturers as a secondary plasticizer for polyvinyl chloride. It is stated that it can be used to replace 40-50% of primary plasticizer such as dioctyl phthalate. Imparts excellent low temperature flexibility characteristics to supported and unsupported vinyl film.

Textiloc BLA
(Maher)

An improved type of a water soluble resin which is said to be effective in preventing slippage of fibers. Stability and ease of handling are its outstanding properties.

Textrafoam
(Tex-Chem)

A synthetic detergent of the amine condensate type furnished as a 100% concentrate and in lower concentrations. It is a liquid of pale color and pleasant odor and of low pH. It is said to have excellent detergent, wetting, foaming and rinsing qualities in hard and soft waters. It is suggested for scouring natural and synthetic fibers, for use in print washing and as a penetrant in dyeing.

Textramine
(Tex-Chem)

A softener of the permanent cation type. It is a white paste which will not darken in the barrel on standing. It is said that it will not discolor or tint whites at all and will not adversely affect the light fastness of colors on dyed or printed goods. It is said to give a firm, full softness rather than a very limp, raggy one. It can be used in combination with finishes of other types which are compatible with cation softeners, such as weighter finishes, urea formaldehyde or melamine resin types, etc.

†Tinofix A Liquid*
(Geigy)

An aftertreating agent for direct dyestuffs which, it is stated, will give improved fastness to water bleeding. It is further stated that many mill problems arising from direct color migration and bleeding of heavy shades on cotton and rayon before they can be dried, as well as migration of color during drying and bleeding in finishing baths, can be overcome by the use of Tinofix A Liquid.

In addition improved wet fastness for the consumer can be assured by the use of Tinofix A Liquid as it is said to improve the resistance to water, damp ironing, perspiration and crocking making it a valuable accessory for cotton and for rayon linings, automobile seat covers, rainwear, umbrellas, dress goods, neckwear and furniture cloths.

† Trademarked.
* Patented.

Trak
(Burkart-Schier)

A general purpose detergent in dry, dust-free form which is said to be characterized by high detergency with low foaming. It is stated that it is equally effective in hard or soft water and is also applicable for automatic home laundry machines.

Trisotex "W"
(Laurel)

A combined sulfonated vegetable oil and a fatty acid condensate which is said to possess good wetting and leveling qualities. It is recommended by the manufacturers as a dyeing assistant for cotton and mixed fibers and is said to be especially adapted for use in the hosiery dyebath.

Ultrawet 60L
(Atlantic Refining)

A new liquid detergent which is an organic alkyl aryl sulfonate consisting of 60% active and 40% water. It is an amber colored, crystal clear, viscose liquid with exceptional water solubility, remaining crystal clear down to 14°F. Ultrawet 60L is said to be characterized by excellent foam, detergency, wetting speed and surface tension reduction. Suggested uses include as a textile detergent, penetrating or wetting agent.

Unfaid
(Jersey)

A substantive softener which is applied in the dyebath during the dyeing of acetate-containing fabric to prevent subsequent atmospheric fading. It is stated that this product permits the dyer to adjust the shade before removal from the dye liquor and does not require a separate operation. It is also stated that protection against gas fading can be enhanced still further by padding with a very dilute solution of an antifume liquid such as Antifume O.

Unwet
(Jersey)

A liquid water repellent emulsion which does not separate into layers and which is said to retain its water repellent properties on storage. It can be diluted to application strength by stirring into cold water and can be applied to cotton, rayon and acetate fabrics.

Velvamine K-90-Super
(Refined)

An improved softening and finishing agent containing no water or inert material. It is stated that it is suitable for all types of fabrics and that it imparts an odorless finish which is resistant to washing and dry cleaning.

Vinterge 113 and 103
(Jersey)

Alkyl aryl sulfonates which are sold

in the form of a transparent amber-colored liquid and which are said to be instantly soluble in water and stable in the presence of acids, alkalies, salts and water containing large amounts of calcium or magnesium compounds. It is claimed that they are powerful wetting agents which penetrate quickly and that they greatly reduce the surface tension of water solutions even when present in extremely small concentrations. It is stated that porous materials such as cloth, yarn and leather will be penetrated rapidly and uniformly by as little as 0.1% of these wetting agents, virtually without regard to the presence of salts or the pH of the solution. They may be used in the processing of cotton, wool, silk, acetate and viscose rayons. It is stated that they are not easily exhausted from baths used in dyeing, bleaching or scouring and that level dyeings result when they are used in the bath with acid colors as well as in alkaline baths such as are usually used in applying vat colors.

Vulcafoams
(Alco)

Laboratory-controlled latex compounds or blended latex compounds supplied with the necessary component parts for the production of foam sponge latex. Technical information is provided with each shipment of the Vulcafoams advising of the quantity additions of the component parts, production time controls, gel limitations and vulcanization times and temperatures.

Vulcanol R-1106-C
(Alco)

A new member of the Vulcanol series of compounds particularly designed for backing low count rugs and carpeting economically. It is a fairly highly loaded compound, yet it is said to form sufficiently tough films to adequately bind in the pile yarns. The compound is said to provide excellent body and stiffness with flexibility. It is an extremely low cost Vulcanol producing durable finishes.

Vulcarites
(Alco)

A series of aqueous dispersions of rubber chemicals useful for preparation of rubber and vulcanizable resin latices. In addition to the standard Vulcarites such as those of sulfur, zinc oxide, antioxidants, accelerators and blends of them, specially prepared Vulcarites are available on request to meet specific latex compounding problems.

Warco GFI
(Warwick)

A durable type gas fading inhibitor for use on dyed acetate fabrics. It is a substantive material which may be applied before, during or after dyeing. The protective effect imparted by Warco GFI is said to be practically unaffected by laundering or dry cleaning operations. This product is supplied in the form of a clear, dark amber colored liquid which disperses readily in water at all temperatures.

Warcolene 171
(Warwick)

A general purpose softener for use on cotton and rayon fabrics said to be extremely resistant to oxidation with little tendency to cause discoloration or odor development in the goods. It is supplied in the form of a thin paste which disperses readily in warm water to form translucent solutions.

Warcosol NF
(Warwick)

A nonfoaming ester type wetting and penetrating agent. It is said to retain its high efficiency in the presence of a wide pH range and in the presence of the normal concentrations of electrolytes. It is supplied as a clear, straw colored liquid which dissolves readily in water at all temperatures to form clear solutions.

Weighter Finish K P
(Arkansas)

Weighter Finish K P is a concentrated product in powder form which, when applied to light cotton and rayon fabrics, is said to yield maximum fullness and body to these goods. It is readily soluble in warm water and ordinarily is used at fairly high concentrations, one to two pounds per gallon, to obtain the desired increase in weight. Weighter Finish K P is highly compatible with nonionic and most cationic finishes but not with finishes of the anionic type, such as sulfated oils. When used without the addition of softeners, it yields a soft hand to the fabric and does not have any tendency to cause yellowing or tendering of the fabric.

White-Sol A
(Burkart-Schier)

A self-emulsifying, nonoxidizing white oil which is relatively odorless, colorless and bloomless. It is intended for use in both finishing and yarn lubrication.

Xyno Resin F-2
(Onyx)

A water-soluble resin used in the fixation of direct dyes.

Xyno Ribbon Finish R
(Onyx)

A clear, slightly viscose solution of a water-soluble resin recommended by the manufacturers as a general all-around acetate finish which does not mark off and does not affect luster. It is said to impart a stiff crisp hand and to be particularly useful as a ribbon finish.

Xynocote A
(Onyx)

A new resin dispersion used in coating and finishing leather.

EQUIPMENT

Buffer Solutions
(Leeds & Northrup)

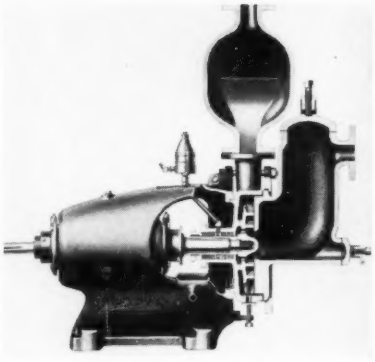
A new line of buffer solutions for calibrating any pH instrument. Nominal pH values are 4, 7, and 9; actual, 4.01, 6.86, and 9.16 at 25°C. Solutions are supplied in 1 pt. unbreakable, non-contaminating, re-useable polyethylene bottles on which are printed pH-temperature calibrations from 0 to 60°C. Buffers are made, and checked after bottling, to National Bureau of Standards specifications.

Corrosion-Resisting Self-Priming Durcopump
(Duriron)

The Model 40 Series R Self-Priming Durcopump is believed to be the most efficient centrifugal self-priming pump made for handling corrosive solutions.

Plant tests conducted in accordance with Hydraulic Institute standards are said to have shown these new pumps to prime in 22 seconds with a static lift of 15 ft. After being primed, they maintain dry vacuum as high as 28.4" Hg. With a static lift of ten feet, air was admitted to the suction line of a 1½" x 1½" Series R Self-Priming Durcopump at the rate of 54 cu. ft. per minute without breaking the prime. The air handling capacity of the new pump is greater than that of any self-priming pump on which comparative tests were made.

This new pump is now available in two sizes, one with capacity ranging from 20 GPM against 81 ft. TDH to 160 GPM



Model 40 Series R Self-Priming Durcopump

against 33 ft. TDH and the other with capacity ranging from 40 GPM against 125 ft. TDH to 240 GPM against 75 ft. TDH, when operating at 1750 RPM. Bulletin 816 available.

Cover for Dye Jigs
(Glasco)

An entirely new type of cover for dye jigs which has two curved cover sections moving in circular tracks at the ends of the enclosure. The two sections divide at the top and can be moved down separately to clear the jig, front and back for loading and unloading, free from overhead obstructions of any kind.

There are no cables, chains, pulleys or counterweight posts to interfere with jig operation. The enclosure sections move on Bakelite rollers which eliminate friction and are fitted with counterweights which move in the circular end tracks in which the enclosure sections themselves move. Opening and closing the enclosure sections is said to be effortless, accomplished by a touch of the hand.

Because the enclosure sections form a complete arc of a circle over the jig when closed, all condensation drains down inside the enclosure. When either or both the sections are opened, the steam vents at the top, with no drip to injure the goods in the jig, or steam blast to endanger the operator.

When closed, the enclosure permits of full observation by large glass windows in the curved enclosure sections.

Stainless steel is used in all parts this enclosure, with the exception of the lead counterweights.

The end frames fit most jig castings presently in use, and the enclosures are easily transferred to new jigs where this is desired. The heavy "E" ring frame is firmly anchored to the jig casting, in a firm, rigid assembly.

This enclosure takes a minimum of floor and working space and all working parts and jig bearings are outside the enclosure.

Installation takes little time and occasions little interruption of production.

Application for patent has been made.

Curved Bar Rubber Expander
(Birch)

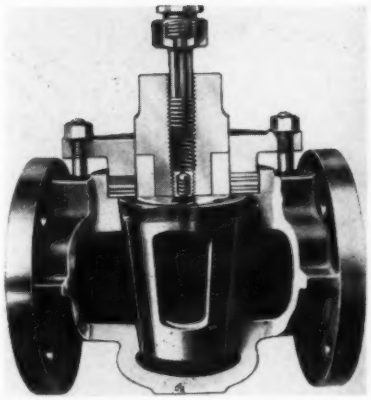
A three-roll curved bar rubber expander. This expander was made to fulfill requirements where spools or bobbins made of stainless steel were needed. This expander is of the adjustable type so that various degrees of stretch may be obtained. The bushings are of the self-lubricated and noncorrosive type and the shafts are of stainless steel.

This machine is used ahead of mangles, dry cans or elsewhere where it is desired to remove wrinkles and double edges and stretch the goods to some extent.

A two-strand rubber expander has also been developed for use where two strands of cloth run so close together that there is not room for two individual machines.

Durco Type A Corrosion-Resisting Plug Valve
(Duriron)

A new Durco valve embodying the general design principles of the Durco top lubricated plug valve made in Duriron since 1921, but with many new features, has been developed, tested in the laboratory and in service, and is now produced in sizes 1" through 3" for immediate shipment.



Durco Type A Corrosion-Resisting Plug Valve

The new features of the Durco Type A Valve are said to be:

1. A composite plug.

2. The body and gland are made and regularly stocked in Durimet 20.

3. The packing for the stuffing box consists of a combination of corrosion resisting hard and resilient packing rings and a Teflon anti-friction packing seal.

It is claimed that these features enable the Durco Type A plug valve to handle almost every type of corrosive, at a very reasonable cost, free of operating hazards under medium pressures and relatively low maintenance. Bulletin 636 is available.

Durco Type B Corrosion-Resisting Plug Valves
(Duriron)

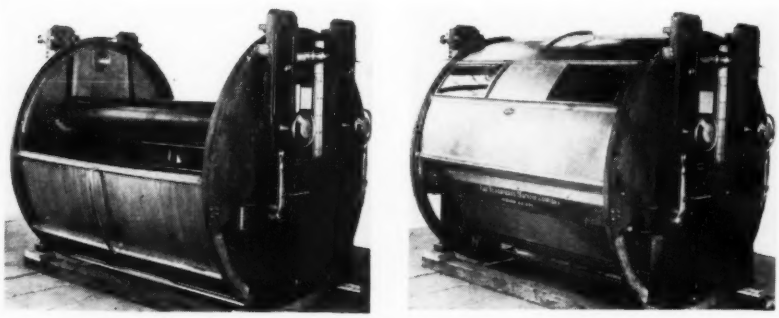
For heavy duty corrosive service. Two new basic designs, plus a comprehensive range of corrosion resisting alloys are said to offer a complete plug valve service for nearly every type of operating and corrosive condition in the process industries. These new designs and improved manufacturing technique are said to permit the successful use of plug valves for services where such valves were often troublesome.

All Durco Type B Plug Valves are said to have these features:

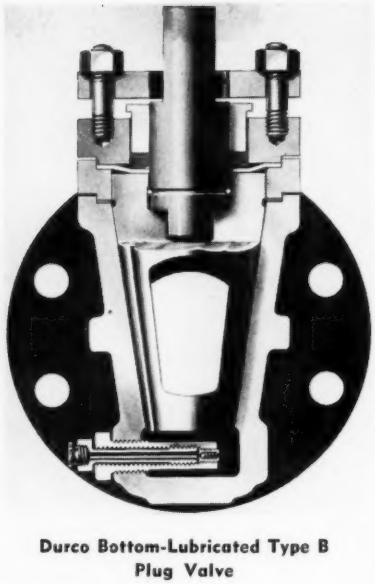
1. Wide range of corrosion resisting alloy bodies.

2. Hard, hardened or hard-faced plugs with grooves cut after grinding and lapping.

3. Teflon diaphragm to provide a com-



Glasco Cover for Dye Jigs Shown in Open and Closed Positions



Durco Bottom-Lubricated Type B Plug Valve

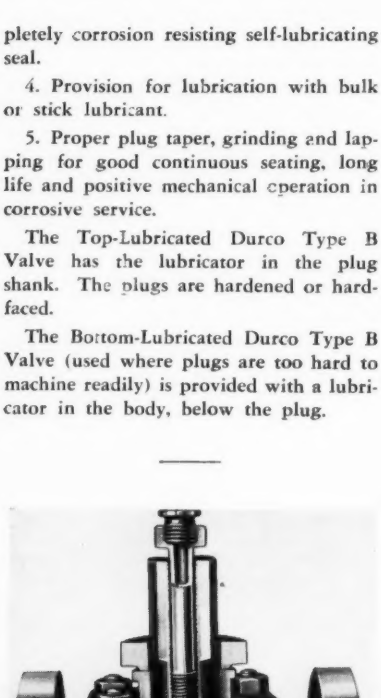
pletely corrosion resisting self-lubricating seal.

4. Provision for lubrication with bulk or stick lubricant.

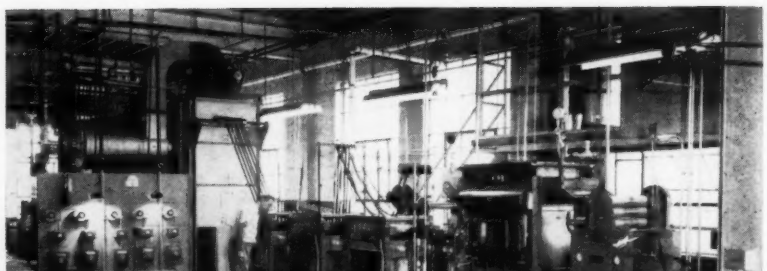
5. Proper plug taper, grinding and lapping for good continuous seating, long life and positive mechanical operation in corrosive service.

The Top-Lubricated Durco Type B Valve has the lubricator in the plug shank. The plugs are hardened or hard-faced.

The Bottom-Lubricated Durco Type B Valve (used where plugs are too hard to machine readily) is provided with a lubricator in the body, below the plug.



Durco Top-Lubricated Type B Plug Valve



Shown here is one section of the new Butterworth two-stage Continuous Dyeing and Finishing Range for narrow fabrics in operation at the Schetty Brothers finishing plant, Carlstadt, New Jersey. Equipment in the range includes: 3-roll Laboratory Padder with liquid level control, Air Dryer, Take-off Mechanism, 3-roll Laboratory Padder, Laboratory Steamer, three 6-roll Washers, Air Dryer and Curer, 10-cylinder Dryer and Finishing section, and Take-off Mechanism.

Frilling Type Folder

(Birch)

A new ball-bearing frilling-type folder of rugged construction with a pair of rubber draw rolls and a box-type plaiter. This machine is for handling cloth that has to be folded into trucks or elsewhere and where a "frilling" fold is desired instead of a flat fold.

Horizontal Calender

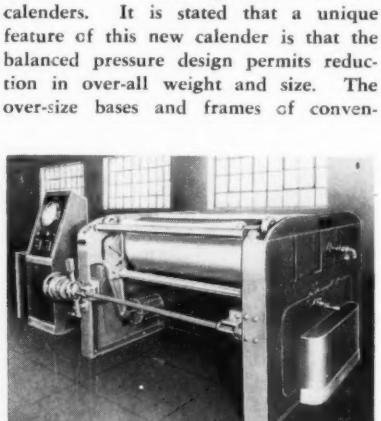
(Butterworth)

A new horizontal calender that requires no more floor space than vertical calenders. It is stated that a unique feature of this new calender is that the balanced pressure design permits reduction in over-all weight and size. The over-size bases and frames of conventional vertical calenders are not required with this new Butterworth calender.

The calender is streamlined, compact and sturdy. In the completely enclosed design of the machine, there are four balanced pneumatic air cylinders. Pressures up to 15 tons can be adjusted to each side of the roll to assure even pressures across the face.

Rolls are protected against damage by a simple valve mechanism for jumping seams. Rolls come apart exactly enough to allow seams to pass and then are brought together again smoothly and easily.

Standard equipment of the Butterworth Horizontal Calender includes: automatic threading device, ball-bearing friction let-off and disc-winder, pressure recording and drum control speed regulator, steam heat to center roll. Gas heat arrangement and temperature control equipment are available if desired.



Butterworth 3-Roll Horizontal 15-Ton Calender—Entrance End

Narrow Fabrics Range

(Butterworth)

A new continuous dyeing and finishing range for narrow fabrics. It is reported to be the first complete vat color range manufactured for narrow fabrics. Six hundred yards of narrow fabrics can be processed in one minute. Fifteen strands of fabric can be run through the range at the rate of 40 yards per minute, sectionalized on rolls with spacers. Rolls have an 18 inch face. The range is only

60 feet long and is equipped with variable speed control for any part of the equipment. Dye box, washer boxes, dryer and curer are all equipped with an automatic temperature control.

For direct colors, the Butterworth Range can be operated as two separate sections with a total production of 1200 yards of narrow fabrics per minute. On vat and sulfur colors, the two stages are used as a single range. The new Butterworth range is especially adapted for the continuous dyeing and finishing of hat bands, ribbons, tapes and other similar fabrics. It is stated that it now makes possible increased narrow fabric production with appreciable savings in time, labor, chemical and steam costs over conventional methods of finishing narrow fabrics wherein skeins are used with each process a separate operation.

Equipment includes: 3-roll laboratory padder with liquid level control, air dryer, optional take-off mechanism, 3-roll laboratory padder with liquid level control, laboratory steamer, three 6-roll washers, air dryer and curer, 10-cylinder dryer and finishing section and optional take-off mechanism.

Open-Width Machine

(Birch)

A new 7-Tank Open-Width Machine of stainless steel constuction with roller bearing squeeze rolls to which pressure is applied by Foxboro air motors, except on the last tank which is equipped with air cylinders to give a 30,000 pound squeeze. The drive is by individual D. C. gear motors controlled by rheostats, actuated by built-in dancer roll compensators to give accurate tension control. The entering end of the machine is fitted with cloth guiders and the delivery end with both a folder and rolling-up arrangement.

This particular machine was built for the new plant of one of the leading mills for scouring and crabbing rayons, rayon blends, worsteds, tropicals, serges and gabardines. Such a machine is said to be particularly essential for the uniform finishing of gabardines.

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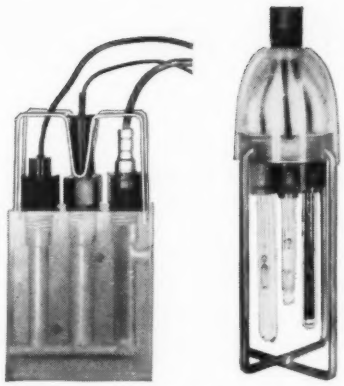
pH Electrode Assemblies

(Leeds & Northrup)

Two new pH electrode assemblies for use with L&N Recorders and Controllers. One assembly is for continuous sampling lines; the other for immersion in open channels and tanks.

The sampling line assembly has low capacity which permits a high flow rate and minimizes the coating of electrodes by suspended material. Operating pressure can be up to 15 pounds. Body of the assembly is a single block of clear plastic, 4¼" x 1⅜" x 4¾". Inlet and outlet connections fit standard ¼" pipe.



New L. & N. pH Electrode Assemblies

The immersion unit can be used at a depth of ten feet, or greater with longer lead wires. The assembly consists of a plastic head, measuring elements, supporting pipe (not supplied) and a junction box. The unit is supplied with a a steel bar guard. A perforated sheet metal guard is available if desired.

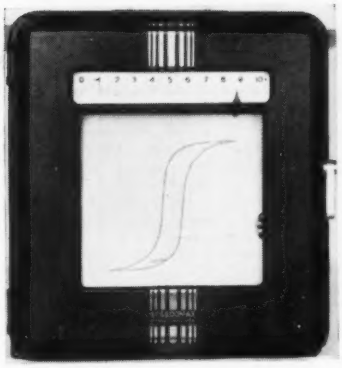
The electrodes and temperature compensating elements are also new. They feature lead wires molded into plastic heads to prevent electrical leakage. All three elements . . . glass electrode, calomel electrode and temperature element . . . screw into place against neoprene gaskets. In case of breakage, replacement is said to be easy.

Speedomax Recorder

(Leeds & Northrup)

A new Speedomax Recorder now automatically plots the relationship between two variables, showing one as a function of the other. Tedious compilation and manual plotting by experienced personnel are said to be eliminated. Instead, the variables to be plotted are converted d-c signals, and connected to the instrument, one to the horizontal axis and the other to the vertical axis. The result is a permanent record which plots in minutes data that would require hours using the usual point by point method.

As compared to the usual recorder, which has only one measuring circuit and a constant speed non-reversing chart paper drive and which plots a variable as a function of time, this new recorder has two measuring circuits. Pen travel (X axis) is controlled by the Speedomax G electronic circuit. A similar circuit controls the chart paper drive, (X axis) and makes it reversible. Thus, the new recorder makes it possible automatically to draw curves such as a hysteresis loop, temperature vs. temperature differences, stress vs. strain or other two-variable curves.



New L. & N. Speedomax Recorder

Response of the instrument is said to be amply fast. The pen takes only 3 seconds for full scale travel of 9⅞". Full chart travel is 10" and requires 4 seconds. Standard minimum input voltage for full travel of the X coordinate is 2.5 millivolts, while the Y coordinate requires a minimum of 10 millivolts, for full travel.

Stainless Steel

(Crucible)

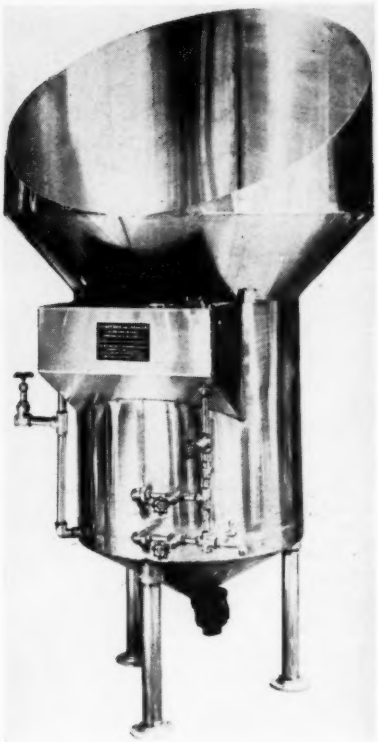
A new sheet and strip mill at Midland, Pa. will roll stainless sheet and strip in widths from ½" to 50" inclusive, in all gauges, grades and finishes. The Trent Tube Company has joined the Crucible organization and stainless tubing is now offered in a wide range of sizes up to 30".

Sterling Lixator

(International Salt)

An improved Lixate Rock Salt Dissolver made of durable stainless steel that, it is claimed, will last a lifetime. Called the Sterling Model, this Lixator rests on 2" pipe legs that are furnished in short lengths so that the unit will be as low as possible to the floor in order to permit easier filling with rock salt. Its height may be easily changed to suit rearrangement of other equipment by attaching different lengths of 2" pipe to the couplings at the bottom of the unit.

It is stated that, because the Lixator automatically produces saturated, pure, crystal clear brine from rock salt, it greatly reduces the cost of salt handling and brine production. In plant installations the rock salt storage pile is placed



International Salt Sterling Model Lixator

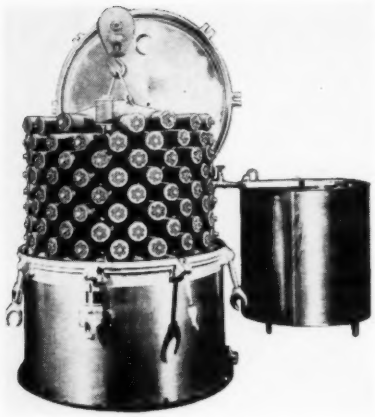
near the Lixator, and saturated brine is piped from there to the dye house, where it can readily be diluted to meet the requirements of any dye formula. Time and money wasted on unnecessary handling of dry salt are said to be completely eliminated.

In addition, use of Lixate brine instead of dry salt as an exhausting agent is said to reduce streaks, irregular shades and spotting, and, at the same time, save salt. It is claimed that plant operating experience has shown that one gallon of saturated Lixate brine, which contains 2.65 pounds of salt, is equivalent to 3 pounds of dry salt as an exhausting agent to accomplish the same results.

Stienen Rayon Package Dyeing Machine

(Standard Fabricators)

A new machine for the dyeing of rayon filament yarn. The rayon dye package may be wound on standard dye tubes from any other wound form (that is, cakes, cones or tubes of any size). In many mills the yarn may be used directly from the dye tube without further rewinding. It is claimed that package dyeing is much more economical than present skein dyeing systems; winding and rewinding is much simpler. A full pound is wound on each package which, it is stated, means lower handling costs, less waste, original quality, minimum of breaks, and no snarling or disturbance of the filaments.



Standard Fabricators' Stienen Rayon Package Dyeing Machine

The machine has horizontal spindles around a central cylinder in a manner similar to Standard Fabricators' porcupine system. It is supplied with their patented 6-way reversing valve and a specifically designed fabricated pump. This pump is used only for rayon package dyeing to meet the special requirements.

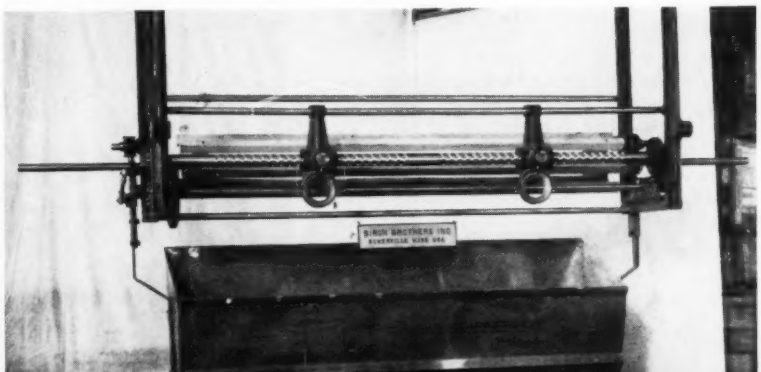
Traverse Plaiter

(Birch)

A new development in the traverse plaiter. Whereas the original machine handled only one strand of fabric, the new machine is designed to handle two strands and if desired the machine may be made to handle three or four strands.

The machine is used for handling the cloth in the rope form, folding it, and evenly distributing it into a small bin or truck. This eliminates hand folding and gives more uniform distribution. The machine is capable of speeds up to 225 yards a minute and is completely ball bearing throughout. All parts with which the cloth comes in contact are of stainless steel or other rust resisting material.

The cloth is drawn through the traveling pot eyes and delivered to the Folder or Plaiter by a reel. It is now being used in several of the leading finishing plants finishing cottons and rayons and also has been applied in some woolen mill finishing rooms.



Birch Brothers' Two-Strand Traverse Plaiter

Proceedings of the

American Association of Textile Chemists and Colorists

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December 12, 1949

REPORT OF ELECTION TELLERS

Total of marked ballots..... 1567

For President

C. Norris Rabold	1251
Others	6

For Vice-Presidents

Arthur W. Etchells	843
George O. Linberg	804
Leonard S. Little	756
Walter M. Scott	684
Others	2

(Signed)
EDWARD S. CHAPIN
ALBERT E. SAMPSON
H. C. CHAPIN

ARTHUR W. ETCHELLS
Vice-President-Elect

C. NORRIS RABOLD
President-Elect

GEORGE O. LINBERG
Vice-President-Elect

CALENDAR

COUNCIL

Meeting: January 13 (New Yorker, New York).

RESEARCH COMMITTEE

Meeting: January 13 (New Yorker, New York).

NATIONAL CONVENTIONS

1950: September 28 to 30, Portsmouth, N. H.
1951: October 18 to 20, Statler, New York
1952: Boston.

NEW YORK SECTION

Meetings: Jan. 13 (Hotel New Yorker, New York), Mar. 3 (Hotel Statler, New York), April 7, May 5 (Kohler's Swiss Chalet, Rochelle Park, N. J.), June 16—Outing.

NORTHERN NEW ENGLAND SECTION

Meeting: Jan. 27, (Hotel Vendome, Boston).

PHILADELPHIA SECTION

Meeting: January 13 (Kugler's, Philadelphia).

PIEDMONT SECTION

Meetings: Jan. 21 (Poinsett Hotel, Greenville, S. C.), April 1 (Robert E. Lee Hotel, Winston-Salem, N. C.), June 30-July 1 (Ocean Forest Hotel, Myrtle Beach, S. C.).

Armed Services Exhibit at Convention

AMONG the highlights of the Atlantic City Convention, the display of the Armed Services exhibits rated high. Ideally located on the spacious sunporch of Haddon Hall, the exhibits enlightened hundreds in regard to operations of the Services' supply organizations through skillful display of the activities of research and development divisions as well as techniques of testing used in conjunction with textile procurement.

The Quartermaster Corps had the most extensive group of exhibits. Fig. 1 shows their display of shade standards and tolerances for OD 33 and Blue 84 within a range used as a basis for shade acceptance. The standards and tolerances are selected on a basis of (1) military requirements and (2) industry's ability to match the standards and/or tolerances on a practical and reasonable production schedule. Along this line, another display featuring pictures of the Quartermaster's new shade room showed shade matching methods with a constant source of daylight.

Shrinkage consideration was the keynote of two other QM displays. One dealt with some problems relating to the procurement of shrinkage resistant sweaters. Another dealt with the shrinkage program on 10½ oz. all-wool flannel shirting. Fig. 2 shows the display of sample test orders of shrink-resistant shirting reported to withstand the rigors of twenty launderings before shrinking out of fit.

Dyers, finishers and those interested in durability characteristics found other informative displays in the QM section. OD 33 was used for a comparison of results obtained with and without a standard dye formulation in one display while another gave a photographic view and illustrative material on the type of work carried on by the Quartermaster Dyeing and Finishing Laboratory. A third exhibit featured the A.A.T.C.C. and QM Research and Development Lab's study on the effect of fabric preparation on dyeing and durability characteristics. Durability entered the picture again with a showing of its improvement in flags through the use of nylon-wool blends.

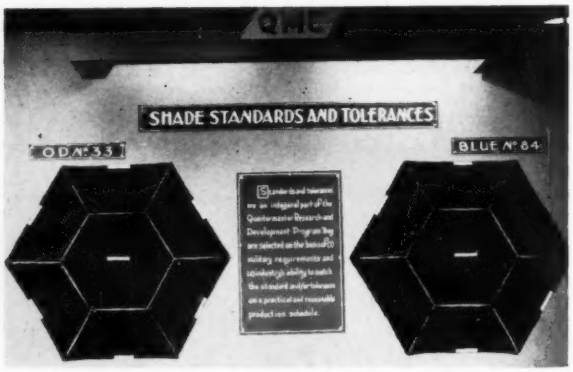


Fig. 1—Shade Standards and Tolerances

Fig. 3 shows the demonstration of the Quartermaster's new Stoll Universal Wear Tester for measuring wear resistance. The use of the Fade-Ometer and standard samples was also demonstrated in evaluating light fastness of fabric specimens submitted by industry.

Other Quartermaster exhibits included models of tents which incorporated special tentage fabrics, a display of new and old standards for 18-oz. all-wool serge, and a pictorial and sample display of work carried on at Camp Lee, Va., Miami, Fla. and Montezuma, Chile, in the testing of military fabrics and development of standard test areas.

The Naval Clothing Depot had five distinct exhibits. Figures 4-6 show the deterioration of cotton in storage, an adaptation of the Rain Tester and "Synthetic Furs," respectively.

Fig. 4 shows the three dimensional graphic display of the breaking strength loss and fluidity of weather-exposed samples of cotton piece goods before and after storage for various periods of time. Types of exposure included direct sunlight, complete coverage and partial coverage (excluding sunlight).

Fig. 5 shows the experimental modifications of the A.A.T.C.C. Rain Tester featuring the adaptation of a water column from the Suter Hydrostatic Tester. Also included is the experimental spray nozzle developed by the Institute of Textile Technology.

Fig. 6 pictures the display of natural furs commonly used in extremely cold weather areas, such as wolverine, timber wolf, etc., as compared to man-made furs knitted with short and guard hair pile.

The other Naval Clothing Depot exhibits involved colorfastness. One showed the present improved vat dyed socks compared to the previous standard diazotized and developed dyeings; the other was a comparison of indigo and vat dyed denims showing the various degrees of colorfastness in laundering, bleaching, perspiration, light, crocking, etc.

The Marine Corps was represented by

Fig. 2—Test Orders—Shrink Resistant Shirting

Fig. 3—Stoll Quartermaster Universal Wear Tester

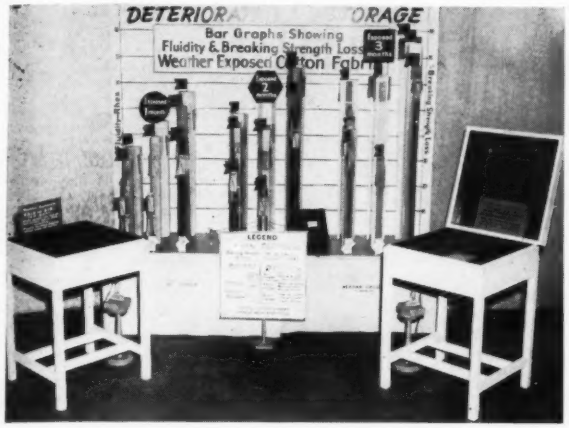


Fig. 4—Deterioration in Storage

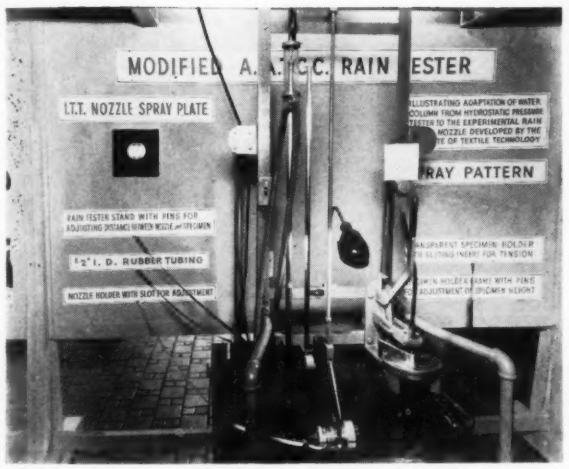


Fig. 5—Modified A.A.T.C.C. Rain Tester

Fig. 6—"Synthetic" Furs

Fig. 7—Marine Corps Exhibit

three exhibits.

Fig. 7 illustrates the photographs and explanations displayed covering uses to which the Marine Corps adapts some textiles. They showed the requirements for unique characteristics for which specification methods are designed to test.

Anothed exhibit comprised a dissertation on the sequence of events from the proposal to buy a textile item to the completion of a contract by a textile firm. Sample invitations to bid, contracts, and specifications were shown and explained.

A third display dealt with the problem of re-coloring web equipage. Attainment of uniformity of shade of various items of web equipage procured during the last war by a vat re-dyeing process was presented.

Report of Hudson-Mohawk Section

A MEETING of the Hudson-Mohawk Section was held November 18th at Jack's Restaurant in Albany, New York. Chairman Jack Epelberg presided at the business meeting.

Robert Nuttall, Southern Technical Director, American Aniline Products, presented a paper entitled "Some Notes on Fast Colorings Obtainable with Napthol and Vat Dyestuffs."

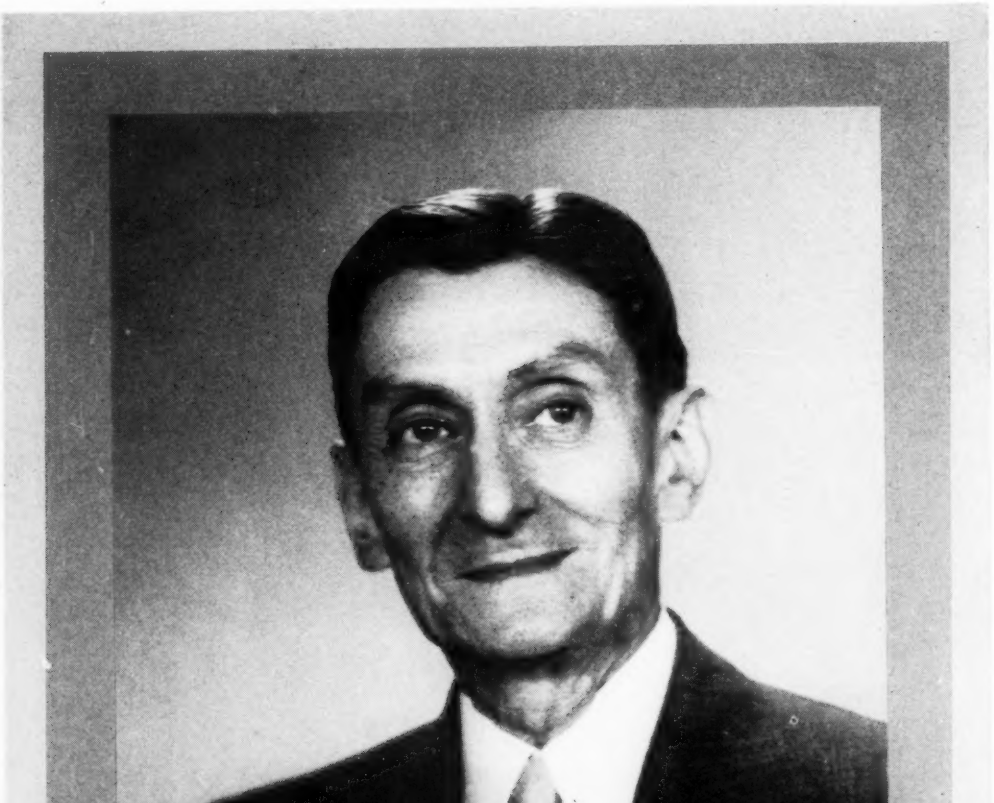
Max Farmer, Patent Attorney, Cluett Peabody and Company, presented a short talk entitled "Human Interest Stories about Patents and Inventions."

Seventy-one members and guests attended the dinner meeting and technical session.

In accordance with the instructions of the nominating committee, the following were elected to office for the calendar year of 1950 by unanimous vote in as much as no additional nominations for the various offices were received:

Chairman ..... David O. Hamer
Vice-Chairman ..... John J. Hanlon
Treasurer ..... Irwin J. Smith
Secretary ..... William A. Nelson

Respectfully submitted,
WILLIAM A. NELSON, *Secretary.*



CHARLES A. SEIBERT
SIXTH OLNEY MEDALIST
1949

Thursday Dinner Session—

OLNEY MEDAL PRESENTATION*

The Medalist, the Man

GEORGE H. SCHULER

IT was about 25 years ago that I first met our Medalist when he came to work at the laboratory where he still labors. At first sight, we who had not known him before could not help but remark that he was a great deal smaller physically than the reputation which preceded his arrival, and we hoped that there was more to him than met the eye. It did not take us long to find out that he knew the dye business and would be a real asset to the organization. I do not mention his size in any disparaging sense. It has always been a sort of trade-mark and may well have been directly responsible for much of the accomplishment we honor here tonight. It must have been apparent to him, even as a youngster, that if he were to make his way it would have to be in some pursuit that called for mental rather than physical prowess. This was not a simple decision. While the Horatio Alger tradition was strong at the time, he started his career, the heroes of those immortal tales were, as I recall, conveniently endowed with the good physiques that came from simple, frugal living. Fifty years ago our Medalist finished his grade schooling and secured his first job in the dye industry at $3.00 per week. He took over the menial duties which, in those days, devolved upon the new boy in any establishment, and improved his after-business hours with evening study. Those were the days when the ambitious boy was able to cultivate his superiors, who were not averse to helping the newcomer. He sat at the feet of the relatively great and acquired technical knowledge and acquaintance with the scientific methods of investigation which he developed in his further activities. Although he started in the natural dye business, after a few years he switched to synthetic dyes. The switch was, indeed, a trend of the time.

The outstanding characteristics of the Medalist (which will be recognized by all who know him) are the effort which he puts into everything he does, his outstanding mastery of detail and his inherent personal modesty. These are particularly remarkable qualities in a man who is celebrating 50 years in business life. Maybe he wasn't given a strong physique, but it certainly wore well.

Effort is a large factor in accomplishment, and Seibert always has made the effort, sometimes to his own detriment. Many of the younger generation fail to appreciate the value of this attribute and prefer to substitute talk for work, much to the disgust of the medalist. He doesn't belong to committees just to indulge in conversation, but to further the assigned purpose. He is always on a working committee and, to my knowledge, is sometimes the only one working.

The anticipation with which he approaches a new problem is a delight to watch. You can just see him—a master of detail—planning an intricate program of investigation and making certain that he does not pass up an important line of attack or miss any of the controls. Those who have observed him in action the past few years on the A.A.T.C.C. wash fastness program, for example, appreciate the truth of this comment. The committee selected 41 commercial cloths—18 piece dyed, 5 yarn dyed and 18 printed patterns. These were subjected to tests at 11 laundries, in eight different types of home laundering equipment and in the Launder-Ometer, 30 consecutive washings being made in each case. Samples were taken at regular intervals. 4,000 yards of cloth in 15,000 individual pieces were involved in the tests. 25,000 gradings were made on the washed pieces. That nearly took his measure, and he is still going in circles over the interpretation of all the data which came out of that program.

His good judgment in interpreting data is generally outstanding, although he is so technically honest that he scorns the obvious propaganda values which lesser discrimination so often seeks. His patience with such enthusiasts and his finesse in producing tests in folders, tests in skeins, tests in pieces, references to the literature and trade experiences are beautiful to watch—in a technical sense, of course. When he concentrates on the marshaling of facts he is sometimes practically "out of this world", so detached and intense is he.

Like the bantam rooster, he does not lack courage. Try to put over a questionable thesis or express a doubt that he knows what he is talking about and he will demonstrate his spirit. True to his German background he possesses a measure of persistence which some people have at times called stubborness. In my experience with him there has been no occasion, however, to use so harsh a term.

He is definitely on the serious side, particularly in later years, and we can easily see why. Compared with his own meticulous careful striving for perfection, the off-hand (yes, slipshod) approach which sometimes characterizes the efforts of those who criticize him is, to say the least, discouraging to him. Nevertheless he continues trying for perfection.

He has had, as have many of us, the honorary degree implied in the use of the salutation "Doctor." Of course, this is sometimes a habit with those who do not know and who play safe by calling everybody "Doctor." But in his case, considering the standing of some who grant him this distinction, I am certain it represents recognition of the quality of his work, the breadth of his presentation of technical matters or his painstaking report of an investigation.

Earlier in this talk there was reference to his inherent personal modesty. While in general he will not be accused of possessing an inferiority complex, so far as his work is concerned he has no insufferable personal pride. He fully appreciates his lack of academic honors and never bores you with tales of personal triumph. He doesn't hold forth at great length on all his accomplishments, and will be the first to acknowledge that he is not always right. He doesn't attempt to justify his minor errors but admits occasional inability to cope with some of the situations with which he is confronted. In spite of all his experience, he tends to be so sympathetic that he is considered by some to be an example of that characteristic which, colloquially, is referred to so descriptively as the "soft touch."

* Atlantic City Convention, October 13, 1949.

He has an encyclopedic knowledge of the properties of dyes but still resorts to the experimental approach to settle nice points. He knows generalizations are so difficult in the field of synthetic dyes, where each item is a distinct chemical entity with its individual behaviour. He is never too busy to help the less qualified to understand the many technical ramifications of the dye business.

In his home community which, for many years, has been the South Jersey city of Salem, he has been active in civic affairs. During the last war he was director of communications in Civilian Defense. His interest in his son's activities saddled him with the onerous task of Chairman of Finance of the local Boy Scout program and, he is at present actively engaged in a responsible capacity with the local American Red Cross group.

Thus, you see, he is a man in the full sense of the word. His record is impressive. Time has not permitted a detailed account of his many A.A.T.C.C. activities, his work in the Philadelphia Section, his labors on many national technical committees, the many unpublished technical talks he has given, or the many hours of what most of us consider our personal time he has devoted to business and association activities. He has earned, the hard way, the honors which come to him tonight as a fitting climax to fifty years of work in the dye industry.

* * *

The Medalist—The Scientist

PAULINE BEERY MACK

THE discussion of Charles Seibert—Scientist—constitutes one of the most gratifying tasks which ever has been assigned me. Born October 18, 1884, of American born parents and German born grandparents, Seibert has, from the age of fifteen years, been engaged in a combination of textile and dye chemistry activity which can not be duplicated in the history of these sciences.

Completing public school in New York City in June 1899—exactly fifty years and four months ago he entered an eight-year period in which he worked for the Oakes Manufacturing Company (Long Island City, New York) in daytime and completed the formal part of his education at night.

The Oakes Manufacturing Company—located in the Steinway Section of Long Island City, a relatively short distance from the present locale of La Guardia Field—manufactured dyes from natural woods and wild roots. Charles was given a wide variety of tasks at which he labored ten hours a day for six days a week, starting at the remarkable wage of three dollars weekly.

The Olney Medal

There were six chemists employed by this firm, all graduates of the University of Maine. These included Allen H. Rogers, who later became head of the Chemistry Department of Pratt Institute, and Charles S. Williams, who subsequently assumed the positions of superintendent of manufacturing and manager of the Naugatuck Chemical Company at Naugatuck, Connecticut (now the Naugatuck Chemical Division of the United States Rubber Company).

During the eight years while Charles was working at practical dye problems under these six well-trained chemists (and learning more from them than is available in most Textile Chemistry college or university curricula), he was attending the Bryant Evening High School in Long Island City, receiving instruction in mathematics, chemistry, and related physical sciences. Through a part of this period he took a correspondence course in chemistry offered by the Carnegie Institute of Technology. During the last three years of this formal education period, he received gratis from Rogers and Williams—his older associates in his daytime job at the Oakes Manufacturing Company—instruction in analytical chemistry. His text was the classical work on *Quantitative Chemical Analysis* by C. Remigius Fresenius (1870), Fifth Edition, in the original German. For the laboratory work which accompanies this instruction, he had the use at night of the facilities and equipment of the Oakes Laboratory.

At one phase of this analytical training, the teachers thought that Charles had become somewhat cocky because of his success in analyzing unknown compounds both qualitatively and quantitatively, and hence they gave him an old storage battery to test, at which task they kept him without mercy for two months.

Charles' practical experience and academic training paralleled that of his father, who completed a general course of study at Cooper Union, graduating with honors in 1879 in the last class to receive diplomas signed personally by Peter Cooper. Seibert has this parchment diploma of his father, which—together with two medals among his ancestral relics he plans to pass on to his son Charles Jr., a student who has completed one year of chemical engineering training at Notre Dame University with a high scholastic record. Charles expressed to me the satisfaction which he feels in being able to add the Olney Medal as his own contribution to the family honors which he will pass on to his son as an incentive to spur him on toward extraordinary achievements on his own account.

At 22 years of age, with more background of experience and training in textile and dye chemistry than most of us acquire in a life-time, Charles Seibert began a career of technical and research achievement which has brought him to the receipt of the highest honors achievable in this great field of endeavor.

Between March, 1907, and October, 1925, he was employed as a laboratory technician, demonstrator of vat dyes and person in charge of various activities connected with the development and manufacture of small ranges of acid and sulfur dyes. During this period he was an employee of the Continental Color and Chemical Company, a part of which became the Farbenfabriken of Elberfeld Company, later the Bayer Company, Inc., and still later a part of the General Dyestuff Corporation.

Between 1910 and 1914 he acted as a demonstrator to introduce the cold dyeing Algol vat dyes developed by the Farbenfabriken Company to the industry. During this period, he collaborated in the

first use of cold dyeing Algol colors to dye U. S. Army cotton uniform cloth on the jig in khaki and olive drab shades. This material replaced the mineral dyed uniform cloth for several years.

Also in this period, Seibert applied vat dyes for the first time on a practical scale both to raw and boiled-off silk, and was the first to dye silk with selected sulfur dyes using caustic soda and hydrosulfite to bring them into solution. Both the vat and sulfur dye colored silks were used as effect threads in men's woolen outer-fabrics. He collaborated in developing the one-bath method for resisting woolen thread with tannic acid so that it could be woven into men's wear woolens to withstand subsequent scouring, fulling and crossdyeing with acid or topchromed dyes to serve as colored effect threads.

Between May 11, 1914, and late February, 1916, he was at the laboratory of the Farbenfabriken Company in Leverkusen, Germany, doing practical technical research on the application of dyes to all existing fibers.

Between October 1916 and November 1918, Charles Seibert was in charge of the manufacture of sulfur dyes for the Williams and Crowell Color Company in Connecticut. A yellow sulfur dye, two golden browns, three cutches, a dark brown and a green were made. During this period the Enemy Alien Custodian had sold the Bayer Company to American interests; and the Grasselli Company, through resale, had secured the dyestuff manufacturing business and equipment. The manufacturing plants were located principally in Rensselaer, New York, and he was sent there in early 1919 to take charge of standardizing manufacturing processes. He spent some time at the Standard Silk Dyeing Company in Paterson, New Jersey, demonstrating the dyeing of silk with vat and alizarine dyes for effect threads in men's wear woolens.

From late 1919 to early 1922 he was with the Passaic Color Corporation, which was manufacturing a range of acid dyes for women's wear woolens.

By early 1922, the old I. G. again had acquired control of the American dye business which they had lost, and they began to reassemble their old key technical and sales personned. At this time the business was operated under the name Grasselli Color and Chemical Company. Between 1922 and 1925, Seibert was in charge of various laboratory activities including technical correspondence, first under Dr. Otto Genssler, and later in direct charge at the headquarters of the company in New York City. He next started a rayon dyehouse in Conshohocken, Pennsylvania, after which he went with Du Pont, starting on May 26, 1926. His service has been continuous with that company to the present time, covering a period of 23 years. For many years, he headed a group which was responsible for special technical sales assignments, evaluation of new products and the determination of all fastness and dyeing properties of a complete line of products.

Charles Seibert was Chairman of the Philadelphia Section of the American Association of Textile Chemists and Colorists during 1930-31, following which he served as its Secretary for about five years. He was the Section representative on the Nominating Committee for National Officers during the entire period of seven or eight years during which this was the method for nominating candidates for National Officers. Following this he served three years as one of the Section Councilors, and thereafter for three years as a National Vice President.

He has been chairman of five different Research Sub-Committees on Test Methods for Color Fastness to Chlorine, to Atmospheric Fading, to Dry Cleaning, to Light, and to Washing; and he is generally accepted as an outstanding practitioner in these fields. His twenty-five years of continuous service with the American Association of Textile Chemists and Colorists has been a work of loyal devotion to the advancement of textile technology.

Seibert is Chairman of the American Society for Testing Materials Task Groups concerned with Test Methods for Color Fastness to Light and to Washing.

He has been a member of the British Society of Dyers and Colourists since 1928, a member of the American Society for Testing Materials, a member since shortly after its founding of the American Association of Textile Technologists, and a member of the American Association of Textile Chemists and Colorists since 1925.

There is attached to this report a list of publications which Seibert has produced, covering many subjects dealing chiefly with research on dye performance and its evaluation. The piece of research which Seibert regards as his outstanding contribution has been in connection with the subject of "The Atmospheric Fading of Commercially Colored Cellulose Acetate Rayon", recently assigned the generic name "Estron" by a Committee of the American Society of Testing Materials. In this field he had an important part in the introduction by the Du Pont Company, of "Anti-Fume DE," the first water insoluble substantively absorbed inhibitor. The advantages of the protection provided by the "Anti-Fume DE" preparation are well known to the rayon dyeing and finishing industry.

In all of Seibert's textile research publications, one notes the detailed, meticulous work of a fundamental textile scientist, combined with the practical touch of one who knows from long experience the business of textile and dye manufacture and application.

Aside from a few technical reports published elsewhere than in the *American Dyestuff Reporter* as well as reports on original material which have not been published, the following series appearing in the designated issues of the journal of this organization cover much of Seibert's work in this field:

"A Proposed Method for the Calibration of Carbon Arc Lamps used for Testing and Grading Lightfastness."

A.D.R. Vol. 34, page 272. (7/2/45)

"Effect of the Fiber pH on the Lightfastness of Dyed Cotton."

A.D.R. Vol. 33, page 311. (7/17/44)

"Report of Committee on Fastness to Dry Cleaning."

A.D.R. Vol. 32, page 362. (8/16/43).

"Atmospheric Fading of Colored Cellulose Acetate Rayon—Part II."

A.D.R. Vol. 31, page 647. (12/7/42).

"Variables Encountered in Fadeometer Testing."

A.D.R. Vol. 30, page 64. (2/3/41).

"Testing Vat Dyed Cottons for Fastness to Hypochlorite Bleaching."

A.D.R. Vol. 30, page 682. (12/8/41).

"The Source of Metals in Dyed Cottons to be Rubberized."

A.D.R. Vol. 29, page 136 (3/18/40).

"Atmospheric (Gas) Fading of Colored Cellulose Acetate—Part I."

A.D.R. Vol. 29, page 363. (7/22/40).

"Rate of Absorption and Affinity at Different Temperatures of Substantive Dyes when Applied to Cotton and Rayon."

A.D.R. Vol. 22, page 383. (12/18/33). and *A.D.R.* Vol. 23, page 12 (1/1/134).

"Some Observations Pertaining to the Uniform Absorption by Rayon of Synthetic Dyes."

A.D.R. Vol. 19, page 29. (1/6/30).

"Vat Dyes for Wool".

A.D.R. Vol. 15, page 56. (1/25/26).

From personal experience I know that Charles Seibert is a great scientist and a great man. Early in our own struggles with textile chemistry research he offered his services to us at The Pennsylvania State College in order that our work might be more practical while none the less fundamental. He trained certain of our assistants in his own laboratory, and helped us to climb down from the classical ivory tower of the college professor to the valley of practicality.

Hail to Charles Seibert—scientist! The textile world is many times richer by vir-

tue of his work! The American Association of Textile Chemists and Colorists honors itself by selecting him as the 1949 recipient of the Olney Medal!

* * *

. . . At this point President Herrmann presented the Medal to Mr. Seibert and read the following citation. . . .

Citation

"Charles Albert Seibert, by the unanimous vote of the Olney Medal Committee you have been elected as the recipient of this award for 1949. During your period of membership in this Association you have applied your talents unselfishly toward the furtherance of its objectives, both as a member and as an officer of the Philadelphia Section, as a National Vice-President and as Chairman of many Research Committees. Your work in these varied activities has been marked by a painstaking attention to detail and downright thoroughness that has commanded the admiration of the entire membership.

Your conscientious devotion to the welfare and advancement of this Association fully entitles you to this distinction, the highest which the organization has the power to confer. With it goes my personal tribute to you who most nearly epitomizes our objectives in men and volunteer services.

May this medal adorn the affection which we have for you. Intrinsically beautiful, it is but a bauble in comparison with what it stands for. May you enjoy it for many years, Charles Albert Seibert! It gives me great pleasure to make this presentation."

* * *

Address of the Medalist

CHARLES A. SEIBERT

MR. President, Doctor Mack and Mr. Schuler; I am sincerely grateful to you for your part in this program, and humbly grateful to all who have contributed in any manner, toward my selection to receive this great honor.

Mr. Schuler has mentioned the desirable qualities of the Medalist, and I assure you that his appraisal is a very lenient interpretation. Doctor Mack has mentioned achievements of a long period of time, yet the Medalist is of the opinion that his presence here is a very generous recognition and approval of a continuously sustained participation in the work of the A.A.T.C.C. Research Committees for about twenty years. That service would not have been possible without the generous contributions of others. Attendance at meetings has required many miles of travel and other expenses, and many absences from regular job productive activity. These costs could not have been defrayed by the Medalist personally. The experiments required to develop information useful in committee work required the use of the equipment and personnel of his employer under the supervision of the Medalist. The total cost of these many items is very considerable for even a large business, and the Medalist is grateful to the Director of the Technical Laboratory, and to the Director of Sales of the Dyestuffs Division of the Du Pont Company, for approval of these expenditures. The Chairman of a Research Committee receives many inquiries from persons interested in and effected by the results of the Committee studies, and these require much correspondence, maintenance of records and continuous perusal of many technical magazines and publications. Only a small part of this work can be done during regular business hours, and by far the larger part must be done at home. I am grateful to my wife for her sympathetic patience and for frequently encouraging this work.

In Committee work, many contribute, and the Medalist is grateful to all his colleagues in research committee studies for their contributions.

The presence of Doctor Mack in a major role in this program has provided the motive for a perusal of records to learn about the part women have had in A.A.T.C.C. activities. Doctor Mack is to my knowledge the only woman who has presented a paper in the Inter-Sectional Contest (for the Philadelphia Section) and it received one of the three awards. The 1926 Year Book includes the names of Helen L. Arey of the New England Section as well as Elizabeth A. Clark and Ruth O'Brien of the Philadelphia Section. The 1931 Year Book lists six active or senior women members. The three already named and Mary M. Danley, New York Section, Doctor Marie S. Ramm, Northern New England Section and Henrietta C. Wood, Philadelphia Section, are still active senior members with one exception, the last named. We have another first, a female member of the Reception Committee. The Research Committee on Fastness to Washing includes five women, and the Research Committee on Fastness to Light one; all are senior members of the A.A.T.C.C.

During the past several years, the A.A.T.C.C. has expanded its activities at a rate bewildering to some of us who remember Council meetings with an attendance of six, and Philadelphia Section meetings that Professors Bertolet and/or Theel had to pad with students to make an audience of a size that could be classed as a meeting. It may be needlessly apprehensive, but the thought persists, that these expanded research committee activities cannot function productively, nor can the required additional ones be formed unless more men and women with the required know how and ambition volunteer to contribute their services where they will be useful. The small group of Research Associates at Lowell, under the Direction of Doctor Stiegler, are doing a good job, but their productivity is directly dependent upon committee chairmen and members, to acquaint them with the problems, and to lend encouragement to their efforts by suggestions for approach toward the achievement of what is desired. We learn by doing, and those who are in immediate contact with deficiencies should be best qualified to aid alleviation and remedy, and these extra services are merely aiding ourselves and our jobs. There is a wealth of satisfaction to be gained from a job well done, and there is satisfaction in the thought that responsibilities gravitate to those who can bear them. Younger men and women can do things more quickly, but the older heads are still useful, if only because they have learned some of the things that will not produce the desired results.

The A.A.T.C.C. aims to be the recognized authority within the scope of its activities, and with some minor exceptions which are gradually being eliminated by recognition of its worth and merit, is being accepted as such by other associations representing interests that either furnish to, or receive materials from, the textile industry. The maintenance of necessary contacts with these associations is another field requiring volunteers with a general knowledge of, or with more detailed knowledge and training in, the many diverse activities that compose the textile industry.

In the United States. labelling, as a means of identifying cotton textiles with outstandingly good colorfastness qualities, was introduced in 1927 by the National Association of Finishers of Textile Fabrics. However, it is doubtful that custom could have reached its present status without the test methods developed by the A.A.T.C.C. Committees to measure colorfastness and other qualities. In the early days, the work of the Research Committees was relatively simple. The men who developed the tests were the men responsible for the production of the fabrics to fulfill the tests they devised: the dyers, chemists and finishers of the cotton and

silk dyehouses and print shops. In the interim, that condition has changed radically. At present a committee devises a test method. As written, it does not necessarily represent what the committee would do if they alone were concerned because they realize that the value of a test method is directly proportional to the number that will use it. Therefore, compromises are at times necessary to obtain wider acceptance. In the sense that nothing is perfect, our A.A.T.C.C. test methods are not, and they require revision from time to time because of changes in the conditions that existed when they were devised and because of desired improvements that only become apparent as a result of continued practical use.

Those in the midst of committee work are frequently discouraged by the slowness of progress, yet patience and more patience is required to devise factually sound test methods and with studied consideration for every interest that will be effected by the results. The aim is (or it should be), test methods so factually sound, that when a fabric fulfills a test requirement, failure in practical performance should be acceptable evidence of faulty treatment. We are at times discouraged by criticism from some who are disappointed by the evidence our work discloses, indicating the necessity for some self criticism and policing within the sections of the industries they represent. I am amazed by the extravagant and exaggerated claims I occasionally read in advertisements, offering the equivalent of indestructible textiles.

The customer is not always right, and the industry itself, in its zeal to perform a service, at times tries to do the impossible. As an illustration, we are told about the set of a dozen napkins that are used by the hostess for meetings of her bridge club. Some times four are used and at other times eight, which means that without the proper rotation in use, some will be washed more often than others with the result that when all are used together their colors are not identical. That does not constitute a merited criticism of the color in the napkins. The correction is obvious. The hostess has a responsibility and should exercise it. Recently, I was asked if I thought a nylon bristle brush was a suitable substitute for a wire brush. When I, in turn, asked for what specific use, I was told: "We scrub our corduroys with a wire brush and soap solution." I asked why, and the answer was, "we receive criticisms that after a few washings, the pants show differences in color at the knees and back of a two piece play suit as against the coat, the result of the youngsters creeping on cement walks and in the sands at the beaches." Occasionally I read the statement, "to be useful, the results from a test must provide reliable information on how the article will perform in practical use." To achieve this very logical objective is not always a simple matter. As an illustration, there are many solid dyed shade fabrics and many printed pattern fabrics in many colors, of which millions of yards have given very satisfactory practical performance under conditions that have included twenty or more repeated washings. Yet, when we send some of these fabrics to commercial laundries or have them washed in home laundry washers, we find more color damage after five washings in some sets than in twenty or more washings in others.

The objective of this work is to ascertain averages, so that we can devise tests to produce color damage comparable with the average of five washings. Five washings is selected because the representatives of women's associations have stated that, in their opinion, nothing that will not withstand five washings without serious color damage should be offered as washable. If we devise a test that produces color damage comparable with the average of the five washings disclosed in our survey, we find that quantity of damage very much greater than is permissible in test interpretation stated in Commercial Standard CS-59, the standard of practice voluntarily adopted by a very large section of the textile industry to govern its business dealings. CS-59 states: "A specimen shall be considered to pass a given test when there is no appreciable change in color," and then states, "Appreciable change shall be understood to mean a change that is immediately noticeable in comparing the tested sample with the original." The textile industry cannot produce fabrics to withstand five washings without more color damage than permissible by this rule, if the average for five washings is to be that disclosed in our survey. We next decide that a logical approach to a solution for this problem may be to learn from many women, how much color change fabrics for different uses can show before they are discarded for color damage.

To illustrate different degrees of color change for this purpose, we selected 41 dyed and printed cotton fabrics available to the public in many stores. They included fabrics for a variety of uses that require frequent washings. We have subjected some of these fabrics to as many as 28 repeated washings in a home laundry washer without effecting nearly as much color damage as the average for five washings disclosed in our survey.

I have been attending meetings of committees formed to establish minimum physical and colorfastness performance qualities for fabrics containing 50 or more percent rayon fibers. These committees have representation from about everyone who has any interest in textiles, including the public. At the last meeting I attended, one group had already selected 31 different qualities for which minimum requirements must be met to enable the fabric to qualify for a label. For some of these physical qualities, reliable test methods have not yet been established, and as I understand the intention, failure to meet the minimum established for any one of these qualities would disqualify the fabric for a quality performance label. This may be ideal, but is it practical? Fortunately, practical minded persons are taking an active interest in this work and may be relied on to guide it into something practically attainable. This is cited principally to direct attention to the necessity for continuous vigilance.

These subjects are important, as are many others to which I could direct attention. However, they are not the subjects that have been uppermost in my thoughts recently. From reminiscence emerges forcefully the realization of the influence on our actions and on our lives that result from accidental occurrences, insignificant in themselves. A relatively large part of our lives is spent in the daily repetition of many small actions which we describe as habits. As we know, habits are an almost inseparable part of each individual. However, most generally, we do not form habits deliberately, or even consciously. Most of them are dictated by expedience and influenced by what we describe as environment. As an illustration, in my late teens (I do not recall where) I bought from a newsstand, for ten cents, a copy of a magazine named "The Philistine", edited by Elbert Hubbard. Hubbard could write interestingly on any subject and did so in *The Philistine, The Fra, Little Journeys* and in other items he published; for at least twenty years I read about everything he wrote. His theme was loyalty and dignity of service to your job, to yourself and to your neighbor. These continuous contacts with his inspirational expressions on these subjects was the environment that formed my desirable habits. I wish I could impart the inspiration for loyalty and the dignity of service that Elbert Hubbard gave me, and that my Mother by action gave me, on self reliance and not to depend on others for things I could do for myself.

With these memories and the fact that I was a member of the committees that selected the first four Medalists, I am cons-

cious that others qualify for the honor the Olney Medal implies, and therefore, I cannot neglect to express a most humble thank you for your decision to the present Award Committee: Henry F. Herrmann, Doctor Walter M. Scott, Kenneth R. Fox, Wyss L. Barker and Harold W. Leitch.

To me the Award has greater significance as an incentive for continued service, than as recognition for past achievements.

Memories also include thoughts of Doctor Olney, A. P. Howes, and many others.

I conclude with thanks to this audience for the privilege of addressing you, and with the wish and hope that you shall have a pleasant and entertainingly informative visit with us at this Convention. Good night.

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Report of Philadelphia Section

A MEETING of the Philadelphia Section was held on November 11th in the English Room of Kugler's Restaurant in Philadelphia.

Walter Hamlen, Jr., Chairman of the Tellers, announced that since there had been no opposition to the nominees suggested by the Nominating Committee, they were declared elected officers for 1950.

Chairman James Dixon then introduced Walter F. Fancourt, 3rd, Chairman of the 1949 National Convention, who announced that the Convention had shown a profit of about $7,000. At a meeting of the officers held earlier, $2,000 of this profit was donated to National Council to be used by the Research Committee for work to be done at the Philadelphia Textile Institute. The balance of about $5,000 was to be used at the Institute for the advancement of future textile chemists and colorists. Administration of this fund was to be by a joint committee of the Philadelphia Section and representatives of the Philadelphia Textile Institute.

Chairman Dixon announced the following on this Committee to represent the Philadelphia Section: W. F. Fancourt, 3rd, Chairman; R. B. Stehle, H. L. Morgan, M. H. Klein, E. E. Rettberg, Jr., and Prof. P. Theel.

A set of pipes was presented to Walter F. Fancourt, 3rd, in appreciation of the untiring effort he put forth to make the 1949 Convention such a great success.

Geo. Altenbaumer of Fred Whitaker Co., exhibited motion pictures taken by him at the Section's Annual Outing.

W. O. Neeb, Althouse Chemical Co., Chairman of the Program Committee, introduced the speaker of the evening, Harry K. Kerr of C. H. Masland & Sons, Carlisle, Pa., who lead a symposium on "Dyeing for the Carpet Industry." Assisting Mr. Kerr were William Ebersold, James Lees and Sons, Hobart P. Shultz, Magee Carpet Co., James A. Knipe, Walter E. Knipe & Sons, Albert H. Reineke, Downs Carpet Co., Jackson Bauer, Fred Whitaker Co., and Richard B. Stehle, Allegheny Dye Works. 210 members and guests attended.

Respectfully submitted,
THOMAS H. HART, *Secretary.*

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EMPLOYMENT REGISTER

This column is open for four insertions per year, per member, without charge. Blanks can be obtained from, and filed with, the Secretary of the Association Lowell Textile Institute, Lowell, Mass It is understood that these will be open to inspection by prospective employers who can obtain further information from the Secretary.

49-28

Education: Textile School graduate.

Experience: Laboratory technician and color chemist.

Age 32; married; references; position as asst. dyer desired.

11-28, 12-12, 12-26, 1-9

49-29

Education: Graduate, tech. inst., chem. engr.; with graduate courses.

Experience: textile research chemist, technical sales.

Age 35; single; position as salesman of dyestuffs and textile chemicals in vicinity of New York preferred, but will go elsewhere.

11-28, 12-12, 12-26, 1-9

49-30

Education: High school with college extension courses in chemistry.

Experience: dyeing and finishing of synthetic fiber fabrics, including testing and development.

Age 28; married; references; eastern U. S. preferred.

11-28, 12-12, 12-26, 1-9

49-31

Education: graduate, technical institute.

Experience: laboratory technician to head dyer, cotton and synthetics.

Age 44; married; references; vicinity of New York, or eastern states preferred.

11-28, 12-12, 12-26, 1-9

49-32

Education: textile institute graduate.

Experience: chemist and dyer, including supervision.

Age 31; married; references; will go anywhere.

11-28, 12-12, 12-26, 1-9

49-33

Education: B.S. from textile institute with honors, 1949.

Experience: chemist and salesman for industrial detergents.

Age 33; married, references; located in New England, but will go elsewhere.

12-12, 12-26, 1-9, 1-23

49-35

Education: B.S. in Textile Chemistry expected from Clemson College, Jan., 1950.

Experience: 1 summer in cotton mill; U. S. Navy; sales clerk.

Age 23; single; references; sales, or dyeing and finishing, in South preferred.

12-12, 12-26, 1-9, 1-23

49-36

Education: B.S. in Chemistry & Dyeing expected from Philadelphia Textile Institute, Feb., 1950.

Experience: 3 summers as laboratory asst., machine hand and chemist.

Age 32; married; references; will go anywhere.

12-12, 12-26, 1-9, 1-23

—♦ ♦—

Report, Bradford Durfee Technical Institute Student Chapter

THE Student Chapter of the Bradford Durfee Technical Institute held its first lecture meeting of the current year on Oct. 28, 1949 in the Institute's auditorium. Wellington H. King, chemist of Arnold Hoffman & Co. of Dighton, Mass., lectured on "Starches and Their Uses in the Textile Field." Paul S. Buffington, color chemist of the same firm, gave a lecture on "Problems in Manufacturing and Standardization of Dyestuffs." Both of these men are graduates of Bradford Durfee.

Respectfully submitted,
RICHARD PAUL BARBER, *Secretary.*

Cellulosic Group Meeting—

PROBLEMS IN AGING TEXTILE PRINTS AND THEIR CONTROL*

PAUL J. CHOQUETTE and OTTO F. HABEL

General Dyestuff Corp.

ATTENTION was first directed to the use of a steaming or aging operation in the printing of vat colors shortly after the synthesis of the stable hydrosulfite (sulfoxylate formaldehyde) in 1900 and 1901. This discovery was followed by the rapid development of a whole series of new vat colors. Schlieper and Baum in their early work had set up many of the principles for this process *(1)*, even though their equipment gave poor color values with vat colors. These poor results were due in part to poor formulation and to the short time factors utilized. Vat-color aging was also adversely affected during this period by the faulty notion that superheated steam must be used. This conception was due to the necessity of high temperatures for discharging some of the dyes in use at that time, such as Para Red or Naphthylamine Claret. Following World War I, the nature of the reactions in an ager became better known through the work of Reinking and others. Agers were then changed in design to make use of saturated steam rather than superheated. The more progressive vat-aging practice in this country has been based largely on efforts to utilize saturated steam in such a manner as to avoid rise in temperature within the ager.

It will be our purpose, first, to discuss some of the principles which help to explain vat color printing and, second, to survey the progress of vat-aging technique in this country. Finally, quantitative data obtained by Fahnoe *(2)* on a pilot ager equipped with instrument control will be presented, together with its significance in minimizing plant troubles through improved controls.

General Principles

Printing may be considered a form of localized dyeing. The vat dyestuff, together with the necessary alkali, hygroscopic material, reducing agent and thickener, is printed, followed by drying. Upon entering the ager the soluble ingredients of the print go into solution by absorption of water from the steam atmosphere. This is followed by reduction of the vat dye to the soluble leuco form, which is then gradually absorbed by the fiber. Oxidation to the insoluble vat pigment, and soaping to remove thickener and any loose color, complete the operation. The relation between dyeing and printing has been clearly shown through data furnished last season by the Rhode Island Section of the A.A.T.C.C. in their paper on "Some Conditions Affecting the Application of Vat Colors" *(3)*. Our knowledge of the printing process has advanced rapidly in recent years. Studies related to the new continuous methods of dyeing, which show the effect of vat crystal size on rate of reduction and the influence of higher temperatures and of oxidation-reduction potential, are applicable to explaining printing phenomena. To illustrate, it was observed that, when dyeing vat blues of the "BCS" types with caustic soda and sodium hydrosulfite at 180 to 190°F., dull shades were obtained from destruction of the dye. On the other hand, if an addition of dextrose or of a suitable W. C. Dextrine *(4)* was made to the system; dye, caustic soda and sodium hydrosulfite, the true shade was obtained. Oxidation-reduction-potential measurements relative to the calomel electrode showed the following:

1/10 oz./gal. dye 2 oz./gal. caustic soda 1 oz./gal. sodium hydrosulphite	electro-motive-force = 1190 millivolts
1/10 oz./gal. dye 2 oz./gal. caustic soda 1 oz./gal. sodium hydrosulphite 3 oz./gal. dextrose	electro-motive-force = 950 millivolts

In other words, for this particular dyestuff and dyeing cycle the latter e.m.f. value would represent optimum conditions. If restrictions are placed on this cycle, such as reduction of temperature or change of alkali, the optimum conditions are found to have changed. Similarly in an ager, if the optimum conditions are based on a temperature of 214-216°F. and the temperature rises above this point, restrictions are placed upon the system and a loss in color value may result from the decomposition of the dye or other factors. Either the temperature must be controlled or other conditions altered.

An example of this type is the plant observation that certain indigoid vat dyestuffs, when printed by means of alkali, glucose and a catalyst, resist the destructive action of excessive temperature in aging better than when the conventional patassium carbonate-sulfoxylate method is used. However, if this system is altered by reduction of the temperature to normal or still further by substitution of an anthraquinone vat dye for the indigoid, the same optimum conditions no longer hold. With most anthraquinone vat dyes this printing method would yield poor color value because a higher e.m.f. is required. In a similar manner, differences noted in the dyeing and printing properties of the so-called dyeing brands of vat dyes may be explained, viz., by restrictions placed upon the optimum conditions. Certain vat dyes require the presence of caustic soda in the reduction medium for dyeing or printing. Hydroxyl

* Presented at Cellulosic Group Meeting, Atlantic City Convention, October 15, 1949.

ions and their stabilizing influence on sodium hydrosulfite raise the e.m.f. of the system. Milder alkalis, such as trisodium phosphate or soda ash, yield a lower concentration of hydroxyl ions, have less stabilizing effect on the sodium hydrosulfite and produce a lower e.m.f. for the system. Though the oxidation-reduction potentials of all vat dyes have not been determined, it has been shown that factors that affect the e.m.f. of the reduction medius alter the dyeing or printing operation. For a given set of conditions the individual vat dyes may require different e.m.f. values to obtain optimum results. The best printing colors are those that vary least under average plant conditions.

A review of the experience of the more progressive printing plants in this country indicated early recognition of the importance of avoiding the build-up of temperature within the ager. Unfortunately, the early methods utilized for this purpose were based largely on practical knowledge and compromises in terms of available steam or equipment. Steam pressures to the hot plates were varied, steam pressures and volumes of steam delivered within the ager were varied and miscellaneous combinations were utilized. Quantitative data which would have been helpful in charting improvement were badly lacking.

One of the first methods to recognize the possibilities of reducing temperature within the ager was that of the Jacoby *(6)* patent. This procedure was based on the principle that heat is required to evaporate water and hence its presence cools the superheated steam atmosphere. This patent made use of blankets saturated with water which were suspended within the ager between the moving printed cloth. Shortly thereafter in 1932, R. E. Ruup *(7)* showed on a plant scale that the rise in temperature of an ager resulted from the heat of condensation of the steam absorbed by the print and the cotton fabric. As this temperature rises from 212° to 234°F. for each 2° rise in temperature, distinct losses in color value are obtained with a maximum loss of 50% at the higher temperature. This work resulted in the design of a special vat ager equipped with large steam injectors on the sides and ends. These injectors, operating with high pressure steam (75 lbs.) drew steam from the top of the ager and recirculate it through the bottom just under the bottom rolls. At the same time water was added through the injector to be dispersed into the steam. This water acted as a coolant by replacing the water lost to the cloth by absorption. This method effectively reduced the temperature of the ager from 225° to 216-218°F. with resultant improved color values. The time of aging was also reduced from 5½ to 4½ minutes.

Another method of introducing water into the system was prehumidification or spraying of the cloth prior to aging. Difficulties in control were encountered. The improved spraying devices now available have helped, and several plants report improved color values from spraying of prints just before entrance to the ager.

Improved steam conditions were obtained in many plants by first passing steam (6-10 lbs.) through the top plates, which are utilized to eliminate condensed water drops, and from there up through the bottom of the ager. In other cases, the steam fed to the ager passed through a water bath at the bottom. All of these methods had for their objective the cooling of steam as delivered to the ager.

Improved distribution of steam has also been obtained by introducing baffles in the sides, which force steam up through the cloth. In other cases, steam was fed to both the top and bottom of the ager. Improved narrow slit-mouth pieces with heated faces to prevent condensation have been very helpful. To summarize, it may be said that the best average aging conditions are being obtained at the present time by plants that maintain a constant pressure of steam supply and a large volume flowing. The steam enters the hot plates and is then exhausted through the ager. The supply of steam to the ager is further supplemented by direct steam connections. Temperatures of 216-218°F. are obtained in practice on the average pattern. At the equilibrium temperature during uniform production, there is a loss in color value of approximately 15%, as compared with the strength obtained when the ager is first started. With higher equilibrium temperatures the color loss would be correspondingly greater.

Recently there has been increasing interest in the so-called Cellapret or pad-steam method first developed in Germany in 1930. In this procedure the vat pigment is first printed with the help of a temporary binder, followed by drying. The goods may then be padded through a solution of caustic soda and sodium hydrosulfite at room temperature, followed by a rapid aging of 10 to 20 secs. Rinsing, oxidization and soaping follow in the conventional manner. Excellent color values are obtained with most vat dyes, including the so-called dyeing brands, by this continuous method. The conventional longer aging time (5 mins.) may be utilized by padding the dried prints through the stable sulfoxylate formaldehyde, potassium carbonate and glycerine, followed by drying and aging. The drying operation may be omitted if the ager temperature is high enough (230°F.) or if the time is extended. The pad-steam method is of particular interest for plants with limited aging capacity. The absence of active chemicals in the print paste makes possible the storing of prints and their later development. This system is being used quite extensively at present by screen printers, and some very interesting results have been obtained in roller printing.

Though good results are being obtained in practice, it is generally realized that further quantitative data would be helpful as a guide toward obtaining better work from improved controls. Fahnoe in his paper, "A Fundamental Study of the Conditions in the Vat Ager with a View Toward Instrumentation and Control" *(2)* has done a fine job of reviewing the literature, designing pilot-plant equipment with instrument control and obtaining quantitative data. I shall not endeavor to cover the details of his work, which has just been published, but shall indicate merely some of the principal conclusions. Two major pieces of equipment were utilized. A small experimental ager was constructed to obtain standard and reproducible conditions for small print samples. Means for superheating steam, for adding definite amounts of air or moisture, and for temperature measurements were available. A larger 100-cu. ft. ager was set up with instrument control, permitting metering of the steam supplied, temperature measurements, differential pressure control, condensate weighing, etc. Continuous cloth runs could be followed.

The data obtained in this work were all based on one standard print thickener as follows:

	%
Rongalite C (Sod. sulfoxylate formaldehyde)	7.5
Glycerine	7.5
Wheat starch	8.5
Caustic gum (British gum)	15.0
Potassium carbonate	14.7
Water	46.8
	100.0

Control Factors

The most important control factors analyzed were as follows:

RELATIVE HUMIDITY.—The importance of control in the storage of prints prior to aging was shown. For a relative humidity of 30%, vat prints may be held for as long as 24 hours without loss of color value; a humidity of greater than 30% but below 45% with storage 24 hours causes a loss of 10-20% in color value.

Redrying and a longer aging time restore the loss. A relative humidity above 45% with storage for only 2 hours or more impair color value—so much that it cannot be restored. At the relative humidity corresponding to the deliquescent points of potassium carbonate (44% R. H.) and Rongalite (53% R. H.) a very sharp drop in print strength occurred. In addition, through absorption of water by the print paste, the soluble ingredients tend to form a solution, migration of which alters the effective action of the chemicals upon the dyestuff as well as impairs absorption of dye by the cloth. In other words, it is easier for the dye to penetrate into the cloth as part of a solution rather than to travel through a solution.

TEMPERATURE EFFECTS WITHIN THE AGER.—The temperature of prints upon entering the steam atmosphere of the ager, as determined by actual measurements, rises rapidly (up to 248°F. in 1 min.). The temperature rise noted on plain cloth due to absorption is relatively slow in comparison. This difference is due to the formation of saturated solutions of noncolloidal chemicals present in the print thickener, as reported by Meggy *(5)*. Reduction-potential measurements also show that the sulfoxylate-formaldehyde reduction attains its maximum action at this point. This heat is supplied by condensation of water from the steam (heat of vaporization). Unless this heat is dissipated as the process continues, the temperature of the steam within the ager rises (superheats). These higher temperatures reduce color value. The weight of water absorbed in the aging of prints is much greater than the calculated amount required for solution of the chemicals; this is attributed to adsorbtion by the cloth itself. The superheating is checked when a corresponding amount of water is supplied to the steam atmosphere.

EFFECT OF AIR.—No more than 0.3% by volume of air is permissible within the ager. Color value is decreased by lowering of the reduction potential of the sulfoxylate from the presence of atmospheric oxygen, which in turn affects the reduction of the vat dyestuff.

QUALITY OF STEAM.—Variations in steam quality from 0 to 5% had no effect on the color value.

STEAM FLOW RATE.—Steam flow should be sufficient to maintain a positive pressure within the ager. This is necessary to eliminate stagnant areas and to prevent air influx. The flow necessary, when determined for a particular piece of equipment, should be maintained constant. Automatic stack damper control maintains this regardless of varying atmospheric conditions. A constant flow of steam should be noted from the cloth gate.

INSTRUMENT CONTROL. — 1000 yards of printed percale was put through the 100-cu. ft. ager equipped with instrument control. The cloth after printing and drying was stored in an atmosphere of less than 35% R. H. The temperature of the ager atmosphere was maintained constant at 215-217°F. by introducing within the ager the predetermined amount of water absorbed by the printed cloth. This finely dispersed water was sprayed against the printed cloth 15 seconds after it had entered the ager. The print temperature at this time had reached 212°F. The print-cloth temperature recorder was located at a point approximately 4 feet further on. Uniform color values were obtained with these controls.

Significance of Pilot-Plant Results in Terms of Plant Practice

The results of this pilot-plant work confirm many of the experiences of plant practice and are suggestive of the value to be obtained from instrument control. The data on the effects of exposure to atmospheres above 30% R. H. emphasize the importance of a proper balance between printing and aging capacities. The ideal situation would of course be aging immediately after drying with controls on the drying to deliver the cloth dry but not overheated. Boxes in which prints are plated after printing and drying should protect the cloth from exposure to the atmosphere. In many plants care is taken to keep the room where dried prints are routed prior to aging warm and dry, thereby avoiding exposure to excessive humidity. For plants like those of smaller screen printers, where aging capacity is so limited that prints must be stored for longer periods than 8 hours under conditions of variable humidity, the pad-steam method should be seriously considered. In this process the vat-pigment prints may be stored indefinitely. No problem of superheat in aging is present with this method, inasmuch as the cloth is saturated with solution from the chemical padding. Temperatures of 230°F. for the short time cycle may be advantageous. The major control factors for small agers are elimination of air and avoidance of condensation. The use of a single mouth piece where the cloth enters and leaves is helpful.

In practice cooling of the print ager is sometimes accomplished by increasing the flow of steam. This is expensive, as an increase of four to ten fold is required to reduce the ager temperature from 222°F. ti 218-216°F. *(7)*. The cooling from the introduction of dispersed water is rapid and should result in worth-while steam savings.

It seems reasonable to regulate the amount of water spray primarily according to the coverage of the print pattern and the temperature of the cloth. Moreover, addition of this water within the ager at the point where the cloth reaches 212°F. is preferable to adding the same outside the ager where there is danger of puddling with the amounts of water required. If this operation is carried out on an independent unit with a longer time factor prior to aging, the danger of migration of chemicals and saturation of cloth is accentuated.

The use of an automatic stack damper control permitting the maintenance of a constant predetermined differential pressure should result in improved uniformity with steam economy. It should be possible to maintain such conditions in practice, for in tests conducted on 15 agers operating normally, pressure in all cases of 0.3 to .08 inches of water above atmospheric were indicated *(7)*.

Analyses of the atmosphere inside plant agers during regular one-/and two-strand vat production indicate that the amount of air present is well below the limits determined by Fahnoe. An average of these tests on 14 agers showed the air content to vary from .003 to .013 to .242% as a maximum.

Aging of Rapidogens and Algosols

Rapidogen (stabilized compositions of naphthol and diazotized base) and Algosol (Indigosol) prints in contradistinction to the vat dyes are not sensitive to the effects of conditioning prior to aging nor to the presence of small amounts of air or higher temperatures within the ager. Correct formulation, coupled with controls on the steam flow to maintain uniformity and temperatures of at least 212° F., are the major requirements. Since these dyes as printed are in solution, problems of migration of soluble constituents away from insoluble color are not encountered.

The final operations after aging are oxidation and soaping. Rapidogens and Algosols are not affected by storage at this point, with the exception that, if the Algosol is not completely developed, it should be protected from excessive exposure to light. This would be the case where completion of the development requires after treatment. In the case of vat

colors, oxidation and soaping as soon as possible after aging are recommended. Some plants have claimed that they obtained improvement in color value by allowing the prints to stand before washing. This would indicate that the aging operation was not complete and that some absorption was still taking place. More frequently, however, cases are noted of deterioration of certain shades by excessive time of standing after aging.

I have endeavored to point out some of the principles and control factors that influence aging. The quantitative data now available, coupled with improved instruments of control, should make it possible better to standardize this operation, thereby improving results and minimizing one of the troubles besetting the average print works.

Bibliography

(1) Adams, C. C. "Am. Dyestuff Reptr." 18, 483-8, 508-11 (1929).
(2) Fahnoe, Frederick, "Am. Dyestuff Reptr." 38, No. 19, p. 663-672, 685 (1949).
(3) The Rhode Island Section A.A.T.C.C., "Am. Dyestuff Reptr." Vol. 38, No. 2, p. 69-75 (1949).
(4) Piedmont Section A.A.T.C.C., "Am. Dyestuff Reptr." 38, No. 5, p. 213-231 (1949).
(5) Meggy, A. B., Rogers, J., "J. Soc. of Dyers, Colourists", 59, 215-17 1943).
(6) R. W. Jacoby, U. S. P. 1,663,846, March 27, 1928.
(7) Rupp, R. E., "Am. Dyestuff Reptr." 21, No. 26, p. 727-28, 737-39 (1932).

Discussion

Question: I have been rather concerned in trying to find out whether or not any data have been obtained from the use of the Dewcel in aging to determine the moisture condition, the amount of moisture present in the steam in either a cottage steamer or an ager. Some claims have been made as to the possibility of the use of such an instrument.

Mr. Choquette: The Dewcel is limited in range to relative humidities of up to 18% at a dry bulb temperature of 220°F. and would not meet the requirements of control within the ager. I am told that an instrument of this type could be developed with an extended range such as would be required for this purpose.

Comment: I think it would be the answer to a lot of problems.

Question: I notice you mentioned that the steam supply was at 25 pounds and that it was reduced to one pound. Did you try to use steam of higher pressure and reduce it to one pound and see whether there was any difference in the results?

Mr. Choquette: All our work was done with steam of an original pressure of 25 pounds reduced to one pound. In practice, due to the low pressure maintained on an ager, the steam is practically in equilibrium with atmospheric pressure, so that if steam is delivered at 212°F. it will maintain that equilibrium. However, if the original steam pressure is very high and is reduced in pressure just prior to entering the ager there is no opportunity of losing its greater heat content as compared with the heat content at the lower pressure and superheat may result. This steam would have to be cooled prior to entering the ager by passage through a length of pipe (radiation) or through the hot plates. A water bath in the bottom of the ager could also be used for this purpose.

Comment: May I presume to elaborate on this subject of superheated steam. I remember a great many years ago my company was I think the first to do vat colors on silk. We also did the first discharges on silk. We went through all the throes you mentioned this morning of superheated steam. At one time we had superheated steam at 100 lbs. pressure, and the higher we went the browner the white discharge became.

The temperatures you have mentioned of 216°F. we arrived at without excessive instrumentation. We simply reduced our steam pressure as delivered to the ager to 19 lbs. pressure. I think there is also great value in conditioning steam, so to speak, by using the exhaust steam from the heated cover of the agers and directing that into the ager.

Another thing we discovered was that, although the first agers were made without the water compartment underneath, by regulation of the amount of what we called exhaust steam from the heating chambers and the depth of the water in the cell below, we were able to arrive at a proper result. You can probably arrive at this same condition by seeing to it that you have an adequate flow of steam through the agers.

One other condition not yet mentioned, so far as I know, is the fact that in most agers all the loops of cloth are very, very close together. By skipping alternately the first half-dozen rollers, we arrived at the optimum result without any elaborate spraying. I am always afraid of spraying because of the danger of spotting the cloth.

Question: I am wondering whether or not any studies have been made with reference to the initial temperature of the cloth going into the agers. Let us assume there is a differential of about 80°F. What happens to the aging condition?

Mr. Choquette: No study was made of cloth temperature prior to aging. The conclusion was reached that the cloth should be dry but not overheated. This would apply to conditions within the ager where sufficient moisture was being supplied to minimize superheat. In practice where superheat was prevalent, this extra heat would be disadvantageous.

Comment: We found when we put goods over dry cans, which naturally is reducing the humidity content, we could run the ager for a longer time without pickup, especially in the first half-dozen rollers.

Mr. Choquette: Control of moisture content in the cloth is an important factor. Prints on cloth of variable moisture content show this very clearly. Much better results are obtained when printing on dry cloth. Instruments are now available to control this factor.

Comment: I think the last question can be answered by a very simple expedient. That is, instead of folding the goods in a truck after printing, which results in uneven exposure, to roll them up. In order to make up for differences in temperature and absorption of moisture, which result from differences in speed on the printing machine, it is advisable to beam the goods prior to passage into the ager. You might find that such a procedure remedies some of those conditions.

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Report of Pacific Southwest Section

THE Pacific Southwest Section held its regular technical meeting and dinner at 6:30 P. M., October 28, 1949, at the Los Angeles Athletic Club in Los Angeles, California.

Plans for increasing membership were discussed by the chairman, H. A. Des Marais.

The speaker of the evening was J. Raymond Nehmens of E. I. du Pont de Nemours & Company, Inc., who spoke on "The Processing of Nylon." Mr. Nehmens illustrated his talk with an interesting display of slides.

The attendance was approximately seventy-five members and guests.

Respectfully submitted,
F. L. WILHELM, *Secretary.*

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Report of Clemson College Student Chapter

THE Clemson College Student Chapter held its first meeting of the season on Nov. 1, 1949. Arthur R. Thompson, chairman of the Student Paper Contest, outlined plans of the Piedmont Section to give the senior students opportunity to prepare a paper and present it at the regular Spring Meeting of the Piedmont Section.

New applicants were welcomed and introduced to the chapter by Roy H. Boggs, chairman. Tentative plans were made to have a steak dinner within the next few weeks.

Respectfully submitted,
H. M. REYNOLDS, *Secretary.*

Mid-West Section—

FAST COLORINGS OBTAINABLE WITH NAPHTHOL AND VAT DYESTUFFS*

R. H. NUTTALL
American Aniline Products, Inc.

Naphthol Dyeing on Hosiery

HOSE are generally dyed on a rotary or similar type machine. We first wet them out with the addition of a suitable wetting agent for 20 minutes at 190°F.; the liquor is then dropped and the bath brought to volume at 130°F.

For a Red shade on 100 lbs. hose, 3 lbs. Amanil Naphthol AS-SW is mixed well into a paste with 2 gallons alcohol. We dissolve 3 lbs. caustic soda flakes in 2 gallons of cold water and add this solution to the naphthol until a good solution is obtained; the remainder is retained for adding to the machine. It is recommended to add 2 gallons of boiling water to the naphthol solution at this point, to improve the solubility.

The balance of the caustic solution is now added to the machine at 130°F.; the machine is run for 5 minutes, then one-half of the naphthol solution is added. Run for 5 minutes, add the remainder of the naphthol and run for 15 minutes more, all at 130°F. Add 15 lbs. common salt to the bath and run an additional 20 minutes, then drop the liquor.

Dissolve 30 lbs. salt in a 50-gallon barrel, with a little ice (to cool down the goods before coupling) and add to the machine; run 30 minutes (at not over 65°F.) and drop the liquor.

Dissolve 9 lbs. Fast Ponceau L Salt in a wooden barrel containing 20 gallons cold water and one-half gallon Stabilon (stabilizing agent); stir well until thoroughly dissolved, and add ice and one-half gallon acetic acid (56%) and transfer to the machine at 50°F. Run for 30 minutes in this coupling bath, then drop the liquor and give one hot water wash, then a soap bath for 15 minutes at 200°F. Finally treat the goods with 2% Stabilon for 15 minutes at 200°F., wash, extract and dry.

You will observe that in dissolving the Naphthol AS-SW we used equal parts of caustic and naphthol; also you will notice that we naphtholated at 130°F. instead of the usual 110°F. as used in general practice; the reason is that with hose it has been found that a little higher temperature gives a better penetration into the hose, particularly when mercerized.

Naphthol Package and Beam Dyeing

We now come to pressure dyeing of naphthols, either packages, cheeses or beams. The procedure is very much the same as for hose except that naphtholation is done mostly around 110°F., and circulation and penetration are evenly obtained by naphtholating, dyeing and soaping from outside to inside and from inside to outside for five to eight minute periods.

It is my experience that great attention to careful naphtholating is the secret of good naphthol dyeing. It is also generally conceded that if we start naphtholation at 100°F., running from outside in and five minutes from inside out, regularly for a whole hour, at the same time adding the naphthol to the machine in portions over four periods of five minutes each, and not using any salt for exhaustion but just giving the naphtholated packages one salt rinse of 30 per cent salt for 30 minutes and using a little ice to cool down the packages in the salt rinse (instead of the usual two salt rinses), the resultant dyeings are better, with much less crocking and bleeding and more uniformity from dyeing to dyeing. The writer has had quite good success in dyeing beams with naphthol red using 3 per cent Amanil Naphthol AS-SW and 3 per cent Fast Red PC Base by the above method. On two occasions he has dyed two lots of three beams each, consisting of one beam of two-ply yarn for the bottom warp of a terry towel weighing 228 lbs., and two single-ply yarn beams, total weight 475 lbs.

You will notice that the use of Stabilon is recommended in the washing of naphthols. Our experience has been that to soap the dyeing first and afterwards to give a hot Stabilon wash not only brightens the shade but reduces crocking and bleeding to a minimum; in fact, it is being used on red terry towelling as a finishing process in the final wash.

Naphthol Dyeing on Piece Goods

There are three methods for applying naphthol colors to piece goods:

1. Naphtholating and coupling on the jig.
2. Naphtholating on the pad, batching up on rolls wet, salting and coupling on the jig.
3. Naphtholating on the pad, drying and coupling on the pad with continuous washing (this can only be done successfully when using non-substantive naphthols).

1. NAPHTHOLATING AND COUPLING ON THE JIG.—The roll is generally wet out for 20 minutes at 190°F. with a penetrant such as Igepon T or Nacconol and the liquor is dropped: the jig is then brought to volume, generally 65-70 gallons, at 110°F. The Naphthol (AS-SW) is pasted with alcohol. An equal amount of caustic soda is dissolved in water and added to the naphthol, using only enough to put it into solution; the balance of the caustic is added to the jig. Give the cloth one end, add one-half of the naphthol solution and run one end, add the remainder and run three more ends; add 15 lbs. salt and run two more ends; drop the liquor, make up to 60 gallons and add 30 lbs. salt with 15 lbs. ice; run two ends and drop the liquor.

Dissolve the coupling salt (e.g., Fast Red 3GL Salt) in a wooden barrel in about 20 gallons of water and ice and one-half gallon of Stabilon. The temperature should

* Presented at meeting, Mid-West Section, September 24, 1949.

be around 45°F. Add 55 gallons water to the jig (around 55°F.), add two-thirds of the coupling salt solution and run one end; add the remainder of the coupling salt and run three more ends, and take a patch. If the shade is light, run two more ends, give one hot running wash, then two ends in soap at 200°F. Drop the liquor and give two more ends in 2 per cent Stabilon at 200°F.; drop and give a warm running wash in two ends and take off.

2. NAPHTHOLATING ON THE PAD AND COUPLING ON THE JIG.—Naphthol AS-SW is generally padded on a two-bowl pad at from 1½ to 3 oz. per gallon according to the shade required, and is batched up wet, taken to the jig and given two ends with 30 lbs. common salt, and coupled with a fast color salt, using from 4½ to 7 oz. per gallon according to the strength of the napthol. The procedure otherwise is the same as above.

3. NAPHTHOLATING AND COUPLING ON THE PAD.—In this method only nonsubstantive naphthols can be used, such as Amanil Naphthol AS, AS-D, AS-OL, AS-G, and AS-BS. The naphthol solution contains about 2½ oz. per gallon, with 2½ oz. caustic, and sulfonated castor oil (if dissolved hot) or alcohol (if dissolved cold), and is padded on the cloth in a two-bowl pad at 180°F., dried in the hot flue drier and dyed on a two-bowl pad with a fast color salt, using about 7½ oz. per gallon (or 2½ oz. fast color base per gallon). The pad is hooked up continuously with a skying arrangement and a continuous washer, such as a soaper or a series of Williams units. The cloth is washed in hot water and finally treated with Stabilon, followed by three becks of boiling water before drying. This method of dyeing is quick, gives good production, and is by far the best method for penetration, as well as crocking and bleeding.

Vat Dyeing on Piece Goods

Now to the subject of vat dyeing and will begin with piece goods. There are today three very popular methods:

1. Pigment padding on a two-bowl pad, batching up wet and reducing, oxidizing and washing on the jig.

2. Pigment padding on a three-bowl pad, drying, reducing, oxidizing, washing and drying, using a continuous Williams unit.

3. Continuous dyeing by the Du Pont Pad-Steam method; pigment-padding, reducing, steaming and oxidizing, all in one run.

The Du Pont method has made use of the principle of the vat ager in miniature; the cloth is padded with the pigmented dye in a two-bowl pad, is dried in the hot flue, and is run directly into a three-bowl "chemical pad" containing caustic, hydro, and sometimes a little white dextrine, and Formopon (to suppress migration of the color), and immediately into a steam chamber for not over one minute at 212°F., to give the dye a rapid high-temperature reduction. This is followed by oxidation, washing, soaping, washing and drying.

Both the Williams Unit and the Pad-Steam method call for the highest type of vat dyestuff, particularly with regard to particle size and dispersion. As a matter of observation, vat colors for use on the Du Pont apparatus have to be selected with particular emphasis on dispersion.

Vat Dyeing on Hosiery

Next to the dyeing of vats on hosiery. It is common practice to dye these in a rotary machine. The procedure is as follows: wet out the hose, bring the machine to volume, add the dyestuff in pigment form and run for 20 minutes at 190°F.; add the caustic, run ten minutes and add the hydro; run for 25 minutes more, checking the bath as to proper reduction from time to time. Drop the liquor, give a cold water running wash for ten minutes, heat to 140°F., add sodium perborate, run 15 minutes, add soap and run for 15 minutes at 190°F., followed by a hot and cold running wash. The dyeing of hose by the pigment method is acknowledged to be the best way to do this work.

Vat Dyeing on Packages and Beams

In the dyeing of packages or beams with vat colors both pigment and reduced methods are used and there is a great difference of opinion as to what should be run pigment and what should be run reduced.

All these different methods of dyeing, whether of naphthol or vat colors, point to the amount of research and application which have gone into making the dyestuff industry more and more successful; this applies both to those employed in the making of the dyes and to the multitudinous users. As we look back to the time when the first vat colors came out, and as we remember what they were like at that time and compare them with the dyes in their present stage of development, the results can justly be deemed miraculous.

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Report of Piedmont Section Meeting

THE Fall Meeting of the Piedmont Section was held at Hotel Charlotte, Charlotte, N. C., November 5, 1949.

A Research Meeting was held at 10:00 A. M., at which time Professor Henry Rutherford, head of the Textile Chemistry and Dyeing Department of the N. C. State College, Raleigh, N. C., was elected Chairman of the Research Committee for 1950. Dr. Holly Y. Jennings, Riverside & Dan River Mills, Danville, Va., is Vice-Chairman. Progress on the current project "The Advantages of Rain-Grown Cotton as Compared to Irrigated Cotton," was discussed. The title for the 1951 Inter-Sectional Contest Paper "The Evaluation of Resin Catalysts" was announced early so that other sections might note.

An officers' luncheon and business meeting was held at 1:00 P. M. In the afternoon the Technical Session convened. Warren Beaumont of the Research Laboratories of Arnold Hoffman Co., Inc., presented a very interesting paper on "The Fixation of Direct Dyestuffs." Kit Carson of Riegel Textile Corporation, Ware Shoals, S. C., presided.

The Banquet was served in the ballroom of the Hotel Charlotte at 7:00 P. M. Dr. George Heaton, Pastor of the Myers Park Baptist Church, Charlotte, N. C., spoke on "New Factors in Labor Relations."

Approximately 250 members attended and arrangements were in charge of W. Chester Cobb, Arnold, Hoffman Co., Inc.

Respectfully submitted,
EDWIN A. BRIGGS, *Secretary.*

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Piedmont Section Meeting Dates

THE Piedmont Section has selected the following dates and sites for meetings in 1950:

January 21—Poinsett Hotel, Greenville, S. C.

April 1—Robert E. Lee Hotel, Winston-Salem, N. C.

June 30-July 1—Ocean Forest Hotel, Myrtle Beach, S. C.

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Report of N. C. State Student Chapter

THE regular monthly meeting of the Student Chapter of North Carolina State College was held on November 3, 1949.

The principal speaker was Karl Bridges, a former student at State College, who is engaged in Technical Service for General Dyestuff Corporation. Mr. Bridges gave an informal talk on his experience with actual technical problems of naphthol dyeing of package and piece goods and printing with Rapidogen colors.

Respectfully submitted,
E. H. ASPINWALL, JR. *Secretary.*

Noncellulosic Group Meeting—

THE DYEING OF "ORLON"† ACRYLIC FIBER AND ITS USE IN COLORED TEXTILES*

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Technical Laboratory
Organic Chemicals Department
E. I. Du Pont De Nemours & Co., Inc.

Introduction

SINCE "Orlon" acrylic fiber has been produced only in limited quantities, few dyers have as yet had an opportunity to attempt the dyeing of it. It is evident, however, from the properties of this fiber, which have been described in some detail *(1)*, that, subsequent to the initiation of its commercial production in the Fall of 1950, it will be in demand for end uses where coloration will be desired. The initial "Orlon" continuous filament yarn will not be dyeable by orthodox procedures except in pastel shades. Therefore, it is a purpose of this paper to describe the techniques which have been employed in the laboratory and, to a very limited extent in the dye house, to color textile materials made of "Orlon" acrylic fiber in medium to heavy shades.

Without question, the fiber is the most resistant of any known to the degrading effects of sunlight and weather. It possesses high dry and wet tensile strength, high resistance to stretching and high flex life. It dries rapidly and is dimensionally stable to normal changes in humidity. "Orlon" fiber also has outstanding resistance to mineral acids, fair resistance to weak alkalies, and is not harmed by common solvents, oils, greases, neutral and most acid salts. The alkali resistance of this fiber is adequate in all boil-off, scouring and dyeing operations and its stability in sodium hypochlorite bleaching is outstanding. The fiber is likewise essentially unaffected by insect and bacterial attack.

Because of its excellent resistance to sunlight, weather and bacteria and because of its high flex life, "Orlon" continuous filament yarn will most certainly be used in awnings, tents, tarpaulins and convertible automobile tops. In development, too, are such domestic fabrics as marquisette and ninon curtains, window shades and Venetian blind tapes. Fabrics for apparel such as rainwear, golf jackets, sports shirts and slacks, dress shirts and lingerie will also be produced from the continuous filament. Because of its resistance to staining by many classes of dyes, it is an ideal yarn for use as a decorative effect thread in piece-dyed fabrics.

Initially, "Orlon" acrylic fiber will be produced as continuous filament yarns. However, research on the development of the acrylic staple is being prosecuted and its ultimate manufacture is contemplated. Research effort is also being directed toward the development of a form of "Orlon" which will be much more receptive to dyes. It is expected that the outstanding characteristics of the staple will cause it to be used alone and in blends with viscose, acetate and/or wool for men's and women's outerwear, dress gods, underwear, sports wear and blankets. It promises to have wide application in fields where 100% wool fabrics are now utilized.

As produced in the pilot plant, "Orlon" has an ecru or cream color. Bleaching agents, in general, have not been effective in obtaining a permanent, good white. Work is underway, however, to make the fiber a better natural white and already considerable progress has been made.

The fiber is readily prepared for dyeing by "boiling-off" in a soap or synthetic detergent solution at 180°-212°F. for 15 to 30 minutes and then rinsing.

Under dyeing conditions which are obtainable in many dye houses, "Orlon" fiber may be dyed in pastel shades with dispersed acetate colors. Some basic dyes and some colors developed on the fiber by oxidation of intermediates (e.g., Oxy Black or Diphenyl Black from p-aminodiphenylamine) may also be applied. Selected vat dyes exhibit limited affinity at dyeing temperatures of 200-212°F. Pigments may be bonded to the fiber by resins.

The acid, chrome and direct dyes, as well as sulfur and azoic dyes, have very little affinity for "Orlon" acrylic fiber continuous filament yarn.

Acetate Dyes

A. TIME OF DYEING AND CONCENTRATION OF DYE IN THE BATH.—"Orlon" continuous filament yarn is not even stained by dispersed acetate colors at temperatures below 180°F. In fact, even at a dyeing temperature of 212°F. the efficiency of dye exhaustion is very poor. Hence, it is recommended that closed equipment be used so as to maintain the temperature as close to 212°F. as possible. It is possible to obtain slightly heavier dyeings by extending the time of dyeing for several hours. Also, noticeably heavier shades may be produced by increasing the concentration of dye in the bath; but, of course, this lowers the exhaustion efficiency even further. Nevertheless, by these means it is probable that tea rose, nude and other pastel shades required for lingerie may be produced commercially.

This poor exhaustion efficiency is evi-

† Du Pont trade mark to designate its acrylic fiber.

* Presented at Noncellulosic Group Meeting, Atlantic City National Convention, October 14, 1949.

TABLE I

Effect of Dye Concentration and Dyeing Time on Absorption of Acetate Dyes By "Orlon" Acrylic Continuous Filament at 212°F.

	*Grams Dye absorbed per 100 grams Fiber**			
	1.0% Dyeing		*5.0% Dyeing*	
	1 hour	*4 hours*	*1 hour*	*4 hours*
Acetamine Yellow CG	0.05	0.05	0.16	0.27
Acetamine Yellow N	0.03	0.06	0.06	0.13
Acetamine Orange GR Conc. 175%	0.09	0.18	0.17	0.32
Celanthrene Red 3B Conc. 125%	0.06	0.11	0.13	0.24
Celanthrene Violet CB	0.01	0.11	0.09	0.34
Celanthrene Purple Conc. 175%	0.05	0.10	0.12	0.41
Celanthrene Pure Blue BRS 400%	0.03	0.13	0.13	0.48

*Taffeta fabric composed of 2.5 denier per filament yarns. (Dye dispersed with 4.0% soap. Dyeings rinsed thoroughly and dried.)

dent from the absorption data in Table I, which were obtained by the spectral transmission measurement of solutions of weighted specimens of the dyed fiber in dimethyl formamide. The fabric was dyed for one and for four hours at 212°F. with 1.0 and with 5.0 per cent of dye (on the weight of the fiber) dispersed with 4.0 per cent of soap.

B. DYEING AT TEMPERATURES ABOVE 212°F.—

1. Aqueous Baths Under Pressure—Although it was recognized that there is at present very little commercial mill equipment in which dyeings can be carried out in an aqueous bath at temperatures substantially above 212°F. under pressure, dyeings were carried out on a laboratory scale to determine whether or not a significantly greater quantity of dye would be absorbed at such temperatures than at 212°F. In order to obtain these data, each acetate dye examined was applied to a pair of skeins consisting of 2.5 denier per filament yarns in a reel autoclave for one hour with 10.0 per cent of dye on the weight of the fiber at 212°F. (atmospheric pressure) and at 275°-293°F. (30-45 p.s.i. gage) respectively. A volume of approximately 60:1 and, for dispersion of the dye, an ultimate soap concentration of 5.0 grams per liter were used. (This concentration of soap is much greater than is normally necessary for dyeing "Orlon" acrylic fiber but was used in this experiment to permit direct comparison with other dyeings which were made with an assistant requiring a large quantity of soap for dispersion). At the conclusion of the dyeing period the skeins were removed from the autoclave and rinsed thoroughly. One skein was then dried but the other was soaped for five minutes at the boil, rinsed and then dried. The data in Table II obtained by spectral measurement of solutions of the dyed fibers in dimethyl formamide demonstrate the very marked improvement in dye absorption at the elevated temperature and also indicate that with many colors little dye is removed by the short soaping at the boil.

Indications are that at temperatures in the region of 295°F., diffusion of the dye into the fiber occurs very rapidly. When fabric composed of "Orlon" acrylic fiber continuous filament yarns was padded with acetate color dispersions so as to entrain an excess of dye and then treated in an aqueous bath at 295°F. for 60 to 70 seconds, the fiber was thoroughly penetrated. Unlike acetate color dyeings on cellulose acetate or on nylon, the latter dyeings exhibited a remarkable resistance to tinctorial loss on washing, even under very vigorous conditions. For example, after ten A.A.T.C.C. No. 3 washings (each for 30 minutes at 160°F. in a solution containing 5.0 grams of soap per liter) a dyeing of Acetamine Yellow N. exhibited only a noticeable change in shade and those of Celanthrene Red 3B Conc. 125%, Celanthrene Pure Blue BRS 400% and Celanthrene Brilliant Blue FFS Conc. 200% were only a trace weaker. This degree of wash fastness is comparable to that exhibited by vat dyes on cotton.

2. Pad-Pressure Steam Dyeing—Whereas dyeing apparatus capable of maintaining dyeing temperatures substantially above 212°F. is not available in most dye houses nor is it readily obtainable at the present time from dyeing machinery manufacturers, cottage steamers are still used in many print works for steaming prints for extended periods of time. Since some of these steamers are capable of being operated under moderate pressures, the dyeing of "Orlon" acrylic fiber continuous filament fabric by a process consisting in the steps of padding with an aqueous dispersion of the acetate color, drying and then steaming at pressures of 15 to 30 pounds per square inch was investigated. Subsequent to steaming, the fabric was soaped to remove loosely adhering dye. As indicated by the data in Table III, fixation of dye at 20 pounds per square inch is essentially complete in a short (10-minute) steaming period, and, when an excess of color is employed, the amount of dye absorbed considerably exceeds that obtained by orthodox techniques at 212°F. However, many acetate dyes other than Acetamine Yellow N and Celanthrene Pure Blue BRS sublimed during steaming at this pressure and uneven sublimation resulted in uneven dyeing. Hence, the feasibility of applying acetate colors in a wide range of medium and heavy strength shades by this approach is precluded by the inherent property of many of the acetate dyes to sublime.

TABLE III

Effect of Pressure-Steaming Time on Acetate Dye Fixation

Time of Steaming at 20 p.s.i. mins.	*Grams Dye per 100 Grams Undyed Fabric*	
	Acetamine Yellow N	*Celanthrene Pure Blue BRS 400%*
10	2.16	2.40
20	2.13	2.68
30	2.34	2.85

Notes: Fabric padded with an excess of dye, dried and then steamed as indicated. Subsequent to steaming, the dyeings were soaped for 10 minutes at 160°F. in a solution containing 5.0 grams of soap per liter.

It is evident that dye absorption by the pad-steam technique considerably exceeds that obtained by dyeing from an aqueous bath at 212°F. Data in Table II indicate 0.37 and 0.21 gram of Acetamine Yellow N and Celanthrene Pure Blue BRS 400%, respectively, absorbed by 100 grams of "Orlon" acrylic fiber in one hour at 212°F.

C. DYEBATH ASSISTANTS.—Another approach to producing heavier strength dyeings is that of incorporating assistants in the dye bath to swell the fiber and/or to transport the dye from the aqueous phase to the solid fiber phase. Assistants

TABLE II

Comparative Acetate Dye Absorption by "Orlon" Acrylic Continuous Filament Yarns at 212°F. and at 275°-293°F.

	Grams Dye per 100 Grams Fiber			
	212°F.		*275°-293°F.*	
	Unsoaped	*Soaped*	*Unsoaped*	*Soaped*
Acetamine Yellow N	0.38	0.37	2.13	1.88
Acetamine Orange GR Conc. 175%	0.24	0.14	1.48	1.30
Celanthrene Red 3B Conc. 125%	0.20	0.20	1.23	1.13
Acetamine Rubine B Conc. 125%	0.08	0.04	0.55	0.53
Celanthrene Violet CB	0.27	0.27	1.45	1.14
Celanthrene Pure Blue BRS 400%	...	0.21	2.37	2.21

Notes: Above dyeings carried out for one hour in a 60:1 volume containing 5.0 grams of soap per liter. Dyed yarn, 2.5 denier per filament, was soaped for 5 minutes at 212°F. in 2.0 g/L soap solution.

which fulfill this function are such aromatic compounds as the cresols, aniline, anthranilic acid and resorcinol. Unfortunately, those assistants which effect the greatest absorption of acetate dyes by "Orlon" acrylic fiber continuous filament are very obnoxious and some are to some extent toxic. Hence, efficient ventilation is a prerequisite to this approach to dyeing "Orlon" continuous filament yarn. If the cresols are used, proper protective equipment, such as rubber gloves, should be worn by dye house personnel. If proper precautions are taken, however, residual assistant may be removed from the fiber satisfactorily. During dyeing, care is required to avoid uneven deposition of the assistant in the fiber which would result in uneven dyeing. Another very serious drawback to the commercial use of these assistants is that in order to obtain moderately heavy dyeings they must be used in such concentrations that their cost may even exceed that of the dyestuff and the exhaustion efficiency affected by their use, while improved, is still of a low order.

The improved receptivity of dispersed acetate dyes from baths containing metacresol and aniline, respectively, is evident from the absorption measurements of laboratory dyeings which appear in Table IV. However, it is also apparent from these data that the exhaustion efficiency is still of a low order. These dyeings were carried out on skeins of 50-denier, 20-filament yarn for one hour at 212°F. in approximately 60:1 volume using a considerable excess of dyestuff (10 per cent on the weight of the fiber). In the preparation of the baths containing cresol, the cresol and the dyestuff are preferably dispersed separately with soap or a synthetic dispersing agent and then the two dispersions are combined. In these experiments a total of 30 per cent of soap on the weight of the fiber was employed. Although much less difficulty is encountered in dispersing aniline in the dye liquor, the same quantity of soap was used in these dyeings and in the control dyeings as well in order to demonstrate comparatively the effect of the assistant itself on dye absorption.

Subsequent to dyeing, all of the skeins were washed thoroughly with water. In order to remove absorbed assistant substantially completely from the fiber, the following treatments were also given:

To remove m-cresol use 3.75 g/l. sodium hydroxide for five minutes at 120°F., then rinse thoroughly with water. Then treat in 3.75 g/l. acetic acid (28%) for five minutes to neutralize residual alkali and again rinse in water.

To remove aniline use 3.75 g/l. acetic acid (28%) for five minutes at 120°F. and then rinse thoroughly in water. Actually a wash in dilute mineral acid, e.g. hydrochloric, would accomplish removal of absorbed aniline more satisfactorily.

To remove surface-deposited dyestuff, all of the dyed skeins were finally soaped at the boil for five minutes in a solution containing 2.0 grams of soap per liter, rinsed and dried.

Although the data in Table IV indicate improved dye strength by the use of metacresol and more particularly by the use of aniline in the dyebath when a moderate concentration of dye is used, the amount of dye absorbed is correspondingly lower and, in general, the exhaustion efficiency is still of a low order.

Less obnoxious than cresol and aniline are anthranilic acid and resorcinol. Both agents exhibit an assistant action when incorporated in the acetate color dyebath. However, despite their presence in the bath and (as indicated in Table V for anthranilic acid) regardless of the concentration of assistant employed, the amount of dye absorbed from a bath containing an excess of color is still very low. With moderate dye concentrations the exhaustion efficiency with anthranilic acid and resorcinol is again of a low order.

From the data presented it is apparent that this type of assistant dyeing will not be popular in the trade.

TABLE IV

Effect of M-Cresol and Aniline Upon Absorption of Acetate Dyes by "Orlon" Acrylic Continuous Filament Yarn at 212°F.

	Grams Dye Absorbed per 100 Grams Fiber		
	No Assistant (Control)	*M-Cresol 20 g/l.*	*Aniline 50 g/l.*
Acetamine Yellow N	0.37	0.55	3.05
Acetamine Orange GR Conc. 175%	0.14	0.34	0.56
Celanthrene Red 3B Conc. 125%	0.20	0.46	1.28
Acetamine Rubine B Conc. 125%	0.04	0.18	2.42
Celanthrene Violet CB	0.27	0.83	2.24
Celanthrene Pure Blue BRS 400%	0.21	0.89	2.17

Note: Dyeings made for one hour at 212°F. with 10.0% dye. Absorption data determined on yarn scoured for 5 minutes at 212°F. in 2.0 g/l. soap solution.

TABLE V

Effect of Anthranilic Acid Concentration on Absorption of Celanthrene Pure Blue BRS 400% By "Orlon" Acrylic Continuous Filament

Anthranilic Acid, g/l.	*Grams Dye Absorbed per 100 Grams Fiber*
0.0	0.11
2.5	0.36
5.0	0.48
10.0	0.78
20.0	1.40
50.0	1.55

Note: Above dyeings prepared with 10.0% dye and 30.0% soap (5 g/l.) in 60:1 volume for one hour at 212°F. and then treated, as follows, after rinsing thoroughly:

3.75 g/l. sodium hydroxide for 5 minutes at 120°F., then rinsed thoroughly with water. Next treated in 3.75 g/l. acetic acid (28%) for 5 minutes at 120°F. to neutralize residual alkali and rinsed again thoroughly. Scoured for 5 minutes at 212°F. in 2.0 g/l. soap solution.

D. FASTNESS PROPERTIES.—As is indicated above in regard to dyeings made with dispersed acetate colors at elevated temperatures under pressure, the wash fastness of "Orlon" continuous filament yarn is outstanding. This is also true of dyeings made at 212°F. and of dyeings made with aromatic assistants. It is well recognized that this class of dyes on nylon will be removed from the fiber to a very marked degree by repeated washing at a temperature as low as 105°F. On "Orlon" acrylic fiber, however, once surface color has been removed by a single soaping the dyed fiber exhibits little or no loss in strength after several washings at temperatures as high as 160° or 180°F. This property of outstanding wash fastness coupled with that of the silk-like hand of the continuous filament should help popularize the fiber for use in lingerie fabrics.

On the other hand, the light fastness of the acetate dyes is of the same order as found on nylon and on cellulose acetate, but on "Orlon" fiber they are not subject to gas fume fading and, if given a light soaping, will not crock.

Vat Dyes

"Orlon" acrylic continuous filament fiber exhibits an affinity for most indigoid and thioindigoid vat dyes at 212°F. The anthraquinone vat colors, on the other hand, exhibit virtually no affinity for the continuous filament. The degree of exhaustion of the indigoids and thioindigoids is markedly improved by incorporating high concentrations of potassium salts, e.g., potassium carbonate, in the dye liquor. Essentially no penetration of the fiber occurs at 212°F. and the fastness to crocking is poor except in light shades which have been subjected to a rigorous soaping subsequent to oxidation. The greatest deterrent to the commercial use of vat dyes, however, is their tendency when applied in heavy shades to deposit unevenly on the yarn or fabric. Nevertheless, the outstanding light and wash fastness which these dyes exhibit on "Orlon" acrylic fiber provides an incentive to study their application further.

A. GENERAL APPLICATION PROCEDURE.—Some success has been attained in the laboratory by a procedure in which the fabric is first padded with a dispersion of the unreduced vat dye or of the vat acid and is then treated with the reducing chemicals at a temperature of 212°F. on the closed jig. The pad liquor is prepared with the required amount of dyestuff and a synthetic surface-active agent, (e.g., "Alkanol" WXN). Best results are obtained by padding with this liquor at a temperature of 180°-190°F. Without drying, the fabric is placed on the jig. Residual pad liquor may be added to the jig after first vatting with an amount of caustic soda and of sodium hydrosulfite to yield a concentration of 0.33 to 0.67 ounce of each agent per gallon of the jig dyebath. Sodium sulfoxylate formaldehyde (Sulfoxite C), in a concentration of 0.67 ounce per gallon, is also incorporated in the dyebath. Treatment on the jig is initiated at a temperature of 140°F. and, in a few ends, the temperature is raised to the boil. Several additions of potassium carbonate are made to the jig liquor until a concentration of six to eight ounces per gallon for light shades or of 10 to 15 ounces per gallon for heavy shades is reached. Dyeing is then continued at 212°F. for one and one-half to two hours during which hydrosulfite and sulfoxylate formaldehyde are added, as needed, to maintain the leuco. The dyebath is then dropped and the fabric washed well. To eliminate any residual alkali the fabric is treated in 0.5 to 1.0 ounce acetic acid (28%) per gallon. Oxidation follows at 212°F. with the addition of 0.5 to 1.0 ounce of Albone C per gallon. Finally the fabric is soaped for about 15 minutes at the boil, rinsed well and dried on a tenter. Best results have been obtained by this procedure in the application of light shades.

1. *Oxidation.* Hydrogen peroxide has been found to be the most suitable oxidizing agent for vat colors on "Orlon" continuous filament yarn materials. Neither bichromate nor perborate develop the shade as thoroughly or as rapidly. It is necessary even with hydrogen peroxide to employ a temperature as near the boil as possible since the absorbed leuco is very resistant to conversion to the pigment form.

2. *Soaping.* It is recommended that vat dyeings be given a vigorous soaping with either a fatty acid soap or a synthetic detergent, preferably at the boil, in order to remove loosely adhering surface color and thereby obtain optimum fastness to crocking. With most of the indigoids and thioindigoids such a soaping also brightens the shade considerably.

3. *Fastness Properties.* Not only do the indigoid and thioindigoid vat dyes on fabrics made from "Orlon" acrylic fiber continuous filament exhibit very good fastness to washing, even at temperatures of 160° and 180°F., but they also exhibit good fastness to light. This is quite outstanding when it is considered that, in general, these dyes have poor light fastness on nylon. As a matter of fact, their light fastness on "Orlon" fiber exceeds that of corresponding dyeings of equal tinctorial strength on cotton and on viscose process rayon.

Although Sulfanthrene Blue 2BDN Extra Paste (C.I. 1184) and Sulfanthrene Navy Blue MR Double Paste (C.I. 1183) when applied in 20 per cent on the weight of the fabric yield medium shades which break to a noticeable degree in about 20 Fade-Ometer hours, Sulfanthrene Pink FF (Pr. 109) and Sulfanthrene Red 3B Paste in similar strength are somewhat superior and Sulfanthrene Brown G Paste (Pr. 121) is outstanding. Even in 1.0 per cent strength the latter dye will withstand 80 Fade-Ometer hours. Thus, consideration should be given the application of vat dyes to any fabrics which are to be used for tentage or automobile tops. While better light fastness in the blue range is desirable, the greatest deficiency is the lack of yellow and orange components having both good affinity and good light fastness. A green would also be a desirable addition to the line.

B. UNORTHODOX COLORATION PROCEDURES.—

1. *High Temperature Dyeing.* The indigoid and thioindigoid vat dyes, like the acetate dyes, may also be applied to "Orlon" continuous filament yarn at temperatures substantially above 212°F. under pressure. By such means it is possible to obtain complete fiber penetration. For example, after dyeing for one hour at 212°F. Sulfanthrene Blue 2BD penetrates the 2.5-denier filament to a negligible degree, but on dyeing for 30 minutes at 250°F. (15 p.s.i.) or for 15 minutes at 267°F. (25 p.s.i.) it penetrates the filament completely. Even at these high temperatures, however, the anthraquinone vat dyes exhibit little or no affinity for "Orlon" acrylic fiber.

2. *Application with Dyebath Assistants.* The improvement in dyestuff utilization obtained by incorporating potassium carbonate in the dyebath has been noted above. Improved utilization may also be obtained by the use of aniline, the toluidines, and other aromatic amines in the dye liquor. With such assistants present in the bath, some of the dibenzanthrone dyes may also be applied to the fiber. This procedure, however, is attended with the hazards mentioned in regard to the use of these assistants in the application of acetate dyes. Beta-naphthol is moderately helpful provided the dyebath pH is maintained at about 10. In general, however, the use of these assistants for the commercial application of vat dyes will undoubtedly be limited to special cases.

Basic Dyes

Light shades may be obtained by applying the basic dyes from mildly acid solutions at 212°F. However, much better tinctorial strength is obtained by padding the fabric with a solution of the basic dye and then steaming for 30 minutes at 20 p.s.i. Subsequent to steaming the fabric should be scoured at 160°F. to remove surface color. Although dyeings prepared in this manner are very bright and have good fastness to washing, they exhibit the very poor light fastness characteristic of this class of dyes.

The "Thermosol" Process of Dyeing

The "Thermosol" process *(2)* was devised chiefly for the coloration of such relatively hydrophobic fibers as "Orlon," nylon and Fiber V. It consists of padding the fabric with dyestuff solutions or dispersions, drying and then subjecting the padded fabric to dry heat conditions for a short time. The dyeing is completed by soaping to remove color fixed only on the surface. The dry heat treatment for "Orlon" fabric is carried out in a hot air oven or over hot rolls in the range 420 to 450°F. for 30 seconds to one minute. Acetate dyes appear most promising for application by this process.

The "Thermosol" method provides practical means of obtaining shades much heavier than those obtainable from dye baths at 212°F., even with large excesses of dye. The "Thermosol" shades are also heavier than those obtained by dyeing in the presence of meta-cresol dyebath assistant. However, it should be noted that, in order to reach such shades of medium depth, it is necessary to pad an excess of dyestuff and wash off the excess after heat treatment. This means that the efficiency of fixation is relatively low, as in all the other methods of dyeing "Orlon," and control of shade in medium depths might be troublesome. Nevertheless, the "Thermosol" process is attractive from the standpoint of providing a new tool for attacking the problem of "Orlon" dyeing and promises also a procedure for dyeing and heat setting fabrics at the same time. The following example illustrates the process:

Disperse 10 parts of Celanthrene Pure Blue BRS 400% with two parts

of oleate soap and 38 parts of water and dilute with 50 parts of a 2 per cent solution of Du Pont Sodium CMC 14WXL (low viscosity). Pad this dispersion on fabric made from "Orlon" acrylic fiber at 120°F. and dry in a flue drier or other suitable drying chamber at 250°F. Then subject the dry fabric to heat in an oven at 440°F. for 60 seconds or to hot roll contact at 440°F. for 20 seconds. Rinse with warm water and complete the removal of excess color by soaping at 180°F. for 15 minutes using 2 per cent "Duponol" D Paste, based on the weight of material. The result is a medium heavy shade of blue which is otherwise obtainable on "Orlon" only by pressure steaming or assistant dyeing.

Pigment Dyeing and Printing

Because of the difficulty in dyeing "Orlon" acrylic fiber by conventional processes in all shade ranges with satisfactory light and weather fastness, it is expected that resin-bonded pigments will assume an important role in the coloration of this fiber. For printing, the water-in-oil emulsions and, for overall coloration, the oil-in-water emulsions have been used with moderate success.

With these products a fairly wide range of light and medium shades having good light and weather resistance may be applied. On the other hand, heavy shades such as navy or black are not satisfactorily applied with resin binders because of the degree to which the fabric is stiffened by the relatively large quantity of resin required to fix the pigment. This change in hand of the fabric is one of the major drawbacks to coloring "Orlon" fiber in medium and heavy shades by this process.

Other disadvantages are the severe crocking in medium and heavy shades, and, except for the oil-in-water types, the necessity of using large amounts of volatile organic solvents during application.

Conventional Printing

Fabric made from "Orlon" continuous filament may be printed with basic, acetate and vat dyes and with some oxidation colors. Although the prints exhibit very good wash fastness and normal light fastness, they are deficient with respect to crock fastness. Even after vigorous soaping, the tendency to crock is still noticeable.

Very full shades of outstanding brilliance are obtained with the basic dyes. Aging is carried out under pressure, or if resorcinol is incorporated in the paste as an assistant, at atmospheric pressure.

Typical formulations are:

	A	*B*
Basic color	1	1
Acetic acid (56%)	5	5
Water	24	9
Resorcinol	—	15
Gum tragacanth thickener	70	70
	100 parts by weight	

Aging: A = 30 minutes at 15-25 p.s.i., gage.
B = 30 minutes at atmospheric pressure.

Selected dispersed acetate colors are also printed in full shades and with them too, resorcinol enhances dyestuff fixation and utilization so that aging may be carried out at atmospheric pressure. The following formulas are recommended:

	A	*B*
Acetate dyestuff	3	3
Glycerine or diethylene glycol	5	5
Water	32	17
Resorcinol	—	15
Keltex or textile gum	60	60
	100 parts by weight	

Aging: A = 30 minutes at 15-25 p.s.i., gage.
B = 30 minutes at atmospheric pressure.

Soaping of basic dye and acetate dye prints for five minutes at 140°F. is adequate for complete removal of thickener. A moderate improvement in fastness to crocking is obtained by soaping at 160°-180°F. without seriously affecting the strength of the print.

Both the indigoid and thioindigoid (Sulfanthrene) vat dyes and also some of the dibenzanthrone vat dyes may be printed on fabric made from "Orlon" continuous filament. Thus, such colors as Ponsol Brilliant Violet 4RN (C.I. 1104), Ponsol Dark Blue BR (C.I. 1099) and Ponsol Jade Green (C.I. 1101) may be added to the Sulfanthrene colors employed in dyeing. Vat color printing pastes are prepared with a British gum thickener containing 10 per cent potash and 10 per cent Sulfoxite C. The prints are aged for 10 minutes in the rapid ager and are then oxidized at 160°F. with Albone or perborate in a liquor containing 2.0 per cent acetic acid. The vat dye prints are then soaped at 200°-212°F. to assure complete removal of thickener and to improve fastness to crocking as much as possible.

Some success has also been achieved in printing oxidation colors as, for example, Oxy Black Base or Para Brown. The printing paste for the black is prepared in three parts as indicated below:

Oxy Black Base	5)	
Acetic Acid (56%)	10)	A
Lactic Acid (50%)	3)	
Acid starch-trag thickener*	32)	
Sodium chlorate	4)	B
Water	3)	
Acid starch-trag thickener*	22)	
Water	12)	
Aluminum chloride (32° TW.)	3)	C
Copper sulfide paste (30%)	3)	
Glycerine	3)	

* Starch tragacanth thickener containing 10 per cent of glacial acetic caid.

Parts B and C are mixed together and Part A is incorporated with this mixture immediately before printing. The printed fabric is rapid aged for ten minutes. Oxidation is accomplished in five to ten minutes at 140°-150°F. in liquor containing approximately 3.0 ounces of sodium bichromate and 1.5 ounces of glacial acetic acid per gallon. Unlike the oxidation of the vat dyes, Albone and perborate are not suitable oxidizing agents for this group of colors.

Decorative Uses of "Orlon" Continuous Filament Yarn

In view of the resistance which "Orlon" acrylic fiber exhibits to coloration by so many different classes of dyestuffs, it should prove to be an excellent fiber for the textile designer to employ in the creation of fancy colored effects. It is recognized, of course, that the fiber itself, as produced at present, is not as white as the fibers which have been used heretofore as effect threads but, as has been pointed out, it is expected that continued development will lead to the elimination of this natural coloration. Accordingly, "Orlon" continuous filament yarn has been examined to determine the degree to which it is stained when it is exposed to wide ranges of dyestuffs of the different classes under various methods of application. As with any fiber which is being used as an effect thread, there are some limitations as to the dyestuffs which may be applied to the ground fabric, but "Orlon" fiber is more universally suitable for this use than any of the fibers at present commercially available.

A. WOOL COLORS.—Both pure silk and cellulose acetate have been used extensively as an effect "thread" (e.g., pencil or chalk stripe, in piece-dyed men's wear). In weaving worsteds the construction is frequently limited by the tensile properties of the effect yarn. Here the high strength of the fiber should be advantageous. Although the wearing qualities of garments in which "Orlon" acrylic fiber is present as an effect "thread" have not been tested as yet, there is every reason to expect it to be more durable than other fibers commonly used for this purpose.

Six of the Chromacyl acid colors were applied in 2.0 per cent to wool and none of these stained the "Orlon" continuous filament yarn which had been sewn into the fabric. Of twenty-seven chrome colors applied to wool flannel in relatively heavy strengths, only three stained the fiber. These dyes and the degree to which they stained the acrylic fiber were:

2.0% Pontachrome Yellow DF (C.I. 110)	noticeably
4.0% Pontachrome Brown CEB	much
8.0% Pontachrome Black F Conc. 125% (C.I. 299)	noticeably

On the other hand, the chrome colors listed in Table VI leave the fiber unstained.

It is evident that worsted fabrics containing "Orlon" yarn as an effect "thread" may be dyed in any strength with a wide range of Chromacyl acid dyes or chrome dyes. Included in the list of aceptable chrome colors are Pontachrome Brown BGL and Pontachrome Fast Gray L which are often applied without chroming for the production of tans and grays, respectively. Since most of the other acid dyes are not used for piece dyeing where maximum fastness is required except for shading purposes, their effect on "Orlon" continuous filament yarn was not tested. However, it is expected that, in general, they will not stain this fiber.

TABLE VI

Chrome Colors Applied to Wool Without Staining of "Orlon" Acrylic Fiber Effect Thread

Conc.		C.I. No.
2%	Pontachrome Flavine A Conc. 125%	219
2%	Pontachrome Yellow GS	36
2%	Pontachrome Yellow SW Conc. 150%	
2%	Pontachrome Yellow 3RN	40
2%	Pontachrome Orange RL	
4%	Pontachrome Brown BGL	
4%	Pontachrome Brown G	238
4%	Pontachrome Brown HN Conc.	98
4%	Pontachrome Brown PGN	
4%	Pontachrome Brown RH Conc.	105
2%	Pontachrome Red A4B	431
2%	Pontachrome Fast Red 2RL	
4%	Pontachrome Red B	216
4%	Pontachrome Fast Red E Conc.	652
4%	Pontachrome Azure Blue BR Conc. 200%	720
4%	Pontachrome Blue ECR Conc. 200%	722
4%	Pontachrome Blue SW	180
4%	Pontachrome Green G	
2%	Pontachrome Fast Gray L	
2%	Pontachrome Gray GL	
4%	Pontachrome Blue Black BB	201
4%	Pontachrome Blue Black RM Conc.	202
8%	Pontachrome Black B Conc. 125%	
8%	Pontachrome Black TA	203

Dyeing Procedure:

Dyestuff, 10% Glauber's salt, 10% Acetic Acid (28%) — 50:1 volume — Boil 30 minutes

Then add: 10% Acetic Acid (28%—boil 15 minutes.

Then add: 1.5% Sodium Bichromate—boil 30 minutes.

Rinse and dry.

B. VAT COLORS.—In the field of vat-dyed cotton piece goods, e.g., curtains, dress goods and shirtings, effect threads have not been used because of the lack of a fiber which would withstand coloration by the vat dyes. Likewise, the application of vat colors with their excellent fastness to washing to men's half hose has been limited primarily to mercerized cotton hose such as the ribbed variety in which no clocks are employed. Tests indicate that "Orlon" continuous filament yarn is not stained significantly by vat colors applied to mercerized cotton tubing by the half-hose procedure and should, therefore, be very satisfactory for use as a white clock in mercerized cotton or viscose rayon half hose which is to be dyed with vat colors. To some extent "Orlon" acrylic fiber may be used as a white effect thread in cotton piece goods by application of selected vat colors by the pigment pad-jig development method, but unfortunately the fiber is stained appreciably by most vat dyes when they are applied by the pigment pad-steam development method.

In Table VII the degree to which the more important vat colors stain "Orlon" continuous filament yarn when they are applied to cotton by each of the three methods is indicated. A rating of "4" or better signifies acceptable contrast for most purposes and for some work a rating of "3" may suffice.

1. *Pigment Pad-Steam Development.* For evaluating the staining of "Orlon" fiber by the colors listed in Table VII heavy dyeings were made on the theory that, if the dyes did not stain the fiber when applied in this strength, they would not stain it when applied in lower concentration. In some instances the concentration of dye applied may exceed that likely to be encountered in practice. For the purpose of this evaluation application of each dye was standardized as follows:

(a) Pigment-padded to 65 per cent liquor retention at 120°F.:
20.0 oz/gal. dyestuff
0.25 oz/gal. "Alkanol" B
(b) Air-dried
(c) Chemical-padded to 65 per cent liquor retention at room temperature:
8.0 oz/gal. Caustic Soda
6.0 oz/gal. Du Pont Hydrosulfite Conc.
4.0 oz/gal. Common Salt
(d) Steamed, 30-second passage, 212°-215°F.
(e) Rinsed
(f) Oxidized 1.0 oz/gal. Sodium Perborate, 30 seconds at 120°F.
(g) Soaped 30 seconds at boil
(h) Rinsed and dried

As is indicated in Table VII, when applied by this procedure, most of the vat dyes stained the "Orlon" acrylic fiber to a more or less serious degree. Subjecting the dyed fabrics to a ten minute soaping at the boil failed to eliminate the stain from the fiber so that it could be acceptable. Neither shortening of the steaming time nor elimination of the drying step following pigment impreganation diminished the degree of staining by Ponsol Navy Blue Double Paste. However, staining was progressively less as the strength of the dyeing was lowered. Greatest difficulty, however, is encountered in the attempted preparation of navy and dark blue grounds since all of the available blue components which build up to such shades markedly stain "Orlon" during pad-steam dyeing.

2. *Pigment Pad-Jig Development.* In this evaluation cotton fabric into which "Orlon" continuous filament yarns had been sewn was pigment-padded and air-dried as it had been in the pigment pad-steam development evaluation. Jig development was simulated by placing the pigment-impregnated fabric in a loose roll in a glass cylinder containing in part by weight of fabric approximately ten parts of a chemical reducing liquor of the following composition:

2.0 oz./gal. Caustic Soda
2.0 oz./gal. Du Pont Hydrosulfite Conc.
4.0 oz./gal. Common Salt.

Development was allowed to proceed at 140°F. for 30 minutes with manual agitation. The fabric was then rinsed in running water and subjected to the following finishing steps:

(a) Oxidation: 20 minutes at 120°F. with 0.25 oz./gal. sodium perborate.
(b) Soaped: 10 minutes at the boil
(c) Rinsed and dried

In all cases as is indicated by the ratings in Table VII, staining of the "Orlon" acrylic fiber was less pronounced by this procedure than by the steam development procedure. Although the fiber was exposed in the simulated jig development to the reducing liquor for a much longer period than during steam development, the temperature was considerably lower during the former period than during the latter. With many colors the contrast is sufficiently good to permit use of "Orlon" in cotton fabrics which are to be dyed with vat colors by the jig development procedure.

Unfortunately, in all attempts to dye a navy shade on the cotton at least a noticeable staining of the "Orlon" fiber was encountered, although much less severe than in the pad-steam application. This seems to be characteristic of the dark blue components (e.g., Ponsol Dark Blue BR Paste, Ponsol Dark Blue 2G Paste and Ponsol Navy Blue Double Paste).

During pad-jig application acetate-dyed "Orlon" acrylic fiber was not altered in shade but indigoid and thioindigoid vat-dyed "Orlon" exhibited considerable "marking off" onto the cotton.

3. *Half-Hose Dying.* When vat colors were applied to mercerized cotton half-hose, "Orlon" fiber effect yarns were essentially unstained by all of the colors examined. Thus, "Orlon" continuous filament yarn appears to be an excellent candidate to meet the requirements of a white clock for vat-dyed hose.

The laboratory dyeing procedure employed in this evaluation consisted in pigmenting the hose in 50:1 volume for 15 minutes at 200°F. in a bath containing:

15% dyestuff
3% "Alkanol" WXN
5% corn sugar syrup, and
15% caustic soda.

The bath was then cooled to 180°F., 20 per cent Du Pont Hydrosulfite Conc. added and dyeing continued at 180°F. for 30 minutes. The hose were then rinsed well, oxidized with sodium perborate for 20 minutes at 120°F., soaped for ten minutes at the boil, rinsed well and dried.

Clean "Orlon" fiber effects were obtained when the following combinations were applied to produce popular half-hose shades:

Cordovan
15.0 % Ponsol Brown VR Paste
4.7 % Ponsol Khaki 2G Paste
0.75% Ponsol Dark Blue 2G Paste

Maroon
15.0 % Ponsol Red Brown RB Paste
1.8 % Ponsol Dark Blue 2G Paste

Navy
7.5 % Ponsol Dark Blue 2G Paste
7.5 % Ponsol Direct Black 3G Double Paste
1.85% Ponsol Red Brown RB Paste

Hunter Green
8.75% Ponsol Jade Green Double Paste
2.5 % Ponsol Brown VR Paste
1.87% Ponsol Golden Orange RRT Paste

Black
12.5 % Ponsol Black BA Double Paste
4.4 % Ponsol Golden Orange RRT Double Paste
1.5 % Ponsol Dark Blue 2G Paste

C. OTHER CLASSES OF DYES.—"Orlon" continuous filament yarn may also be woven with viscose process rayon in various constructions which on subsequent dyeing with direct or developed colors will be left unstained while the rayon is dyed. When woven with cellulose acetate or nylon, "Orlon" fiber will be left unstained while the latter fibers are dyed by acetate colors at a temperature of 180°-190°F. "Orlon" is likewise unstained by the application of Anti-Fume DE to the cellulose acetate and by the diazotization and development of Acetamine Diazo colors on cellulose acetate or on nylon. "Orlon" acrylic yarn dyed in pastel shades with acetate colors exhibits no loss in strength during the application of acetate dyes to the other synthetics. This suggests the use of "Orlon" continuous filament yarn as a picot stripe in nylon hosiery which is to be dyed with acetate colors.

TABLE VII

Staining of "Orlon" Acrylic Continuous Filament Yarns During Application of Vat Dyes to Cotton Grounds

		Degree of Staining of "Orlon"		
	C.I. No.	*Pad-Steam*	*Pad-Jig*	*Half-Hose*
Ponsol Flavone GC Paste	Pr. 9	5–4	5	5–4
Ponsol Yellow AR Double Paste	1132	5	5	5
Ponsol Yellow GGK Paste		5–4	5	5–4
Ponsol Yellow G Double Paste	1118	5–4	5	5–4
Ponsol Yellow FG Double Paste		4	5–4	5–4
Ponsol Yellow 3R Paste		4	5	5–4
Ponsol Golden Orange 4G Paste		4	5	
Ponsol Golden Orange G Double Paste	1096	3	5–4	5–4
Ponsol Golden Orange YL Double Pst.		3	5–4	5–4
Ponsol Golden Orange RRT Paste	1098	3	5–4	5–4
Ponsol Brilliant Orange RK Paste		5	5	
Ponsol Brown ARN Double Paste	1151	4	5	5
Sulfanthrene Brown G Paste	Pr. 121	1	4	
Ponsol Brown BBT Paste		5–4	5	
Ponsol Red Brown RB Paste		5–4	5	5–4
Ponsol Brown VR Paste		4	5	5
Ponsol Brown AG Double Paste	1152	3	5–4	5–4
Ponsol Brown BB Paste	1120	3	4	4
Ponsol Khaki 2G Double Paste		2	5–4	5–4
Sulfanthrene Pink FF Paste	PR. 109	1	4	4
Ponsol Red BN Double Paste	1162	5–4	5	5
Ponsol Brilliant Red B Paste		4–3	5–4	
Ponsol Red G2B Double Paste	Pr. 124	3	5–4	5
Sulfanthrene Red 3B Paste	1212	2	4	
Ponsol Violet RRNX Paste		4	5	5
Ponsol Brilliant Violet 4RN Paste	1104	1	4	5–4
Ponsol Violet RRD Paste	1104	1	4	5–4
Ponsol Violet AR Double Paste	1135	3	5	5
Ponsol Brilliant Violet 3B Paste	1105	1	3	5–4
Ponsol Violet BNX Supra	1163	5–4	5	5
Ponsol Dark Blue BR Paste	1099	1	3	5–4
Ponsol Navy RA Double Paste		1	4	
Ponsol Dark Blue 2G Paste		1	4	
Ponsol Navy Blue Double Paste		1	4–3	5–4
Ponsol Blue BF Double Paste	1113	2	5–4	5
Ponsol Blue BCS Double Paste	1114	2	5–4	5
Ponsol Blue GD Double Paste	1112	4	5	5
Ponsol Blue 3G Paste	1109	4	5	5
Ponsol Jade Green Double Paste	1101	2	4	5–4
Ponsol Green 2BL Paste		3	5–4	5
Ponsol Olive AR Double Paste	1150	3	4	5
Ponsol Olive GGL Paste		3	5–4	5
Ponsol Gray R Paste		3	4	
Ponsol Direct Black 3G Double Pst.		2	4–3	5–4
Ponsol Black BA Double Paste	1102	2	4–3	5–4
Ponsol Direct Black RDS Paste		1	4–3	

Notes: The above pad-stream and pad-jig ratings were made on dyeings developed from 20 ounce per gallon, 65 per cent pick-up pigment paddings. The half-hose ratings refer to dyeings made with 15 per cent dyestuff on the weight of the cotton. The numerals used to signify the degree of staining of the "Orlon" acrylic fiber denote:

5 = negligible staining, excellent contrast
5–4 = trace staining, excellent contrast
4 = noticeable staining, good contrast
3 = appreciable staining, fairly good contrast
2 = considerable staining, fair contrast
1 = much staining, poor contrast

Dyeings of Ponsol Black BA Double Paste were treated for 20 minutes at room temperature in a solution containing 0.25 ounce sodium nitrite and 0.4 ounce hydrochloric acid (conc.) per gallon.

Summary

"Orlon" continuous filament yarn may be dyed in pastle shades at the boil with dispersed acetate colors but the economy of dyestuff utilization is poor. Unorthorodox dyeing procedures involving dyeing temperatures above 212°F. under pressure or the use of aromatic dyebath assistants are required for the production of heavy shades with the acetate dyes. Indigoid and thioindigoid vat dyes yield medium strength, fairly light fast dyeings at the boil from baths containing a high concentration of potassium carbonate but complete penetration of the individual filament is attained only at temperatures substantially above 212°F. Except in light shades, however, the crock fastness of vat color dyeings is usually not good. Resin-bonded pigments are likely to be used to a considerable extent in coloring fabrics made of "Orlon" acrylic fiber. Prints of basic and acetate dyes are fixed by aging for 30 minutes at 15 to 25 p.s.i. or, if resorcinol is incorporated in the paste, at atmospheric pressure. Selected vat dye prints require only a ten-minute rapid aging but are deficient in fastness to crocking.

"Orlon" acrylic fiber has many possibilities for use as a decorative fiber in Chromacyl and chrome-dyed worsteds and in vat-dyed cottons. In this respect it appears far more versatile than other fibers now used for this purpose.

References

1. Quig, J. B.: Papers of American Association of Textile Technologists 4, 61 (March 1949).
2. "Thermosol" Process: The Technical Bulletin (Du Pont), Vol. 5, No. 2, June 1949.

Discussion

Question: At 155 degrees, "Orlon" became somewhat plastic and then became stiff and boardy—is that true?

Dr. Meunier: I'm sorry, you must have mixed this with some other fiber. This fiber is not affected. The softening point is somewhere around 250°C.

Question: Is there any test for determining "Orlon" in the presence of other

fibers?

Dr. Meunier: I do not know. We will have to refer you to our fiber people for that. We have done no work along that line.

Question: In the case of vat dyeings at higher temperatures where you obtain better penetration as compared to dyeing at 212°F., have you noted any difference in the fastness to light as well as the fastness to crocking in both cases?

Dr. Meunier: I believe that the fastness to crocking is definitely better, and I am quite sure that we have noted no difference in fastness to light.

Question: Are you able to dye black satisfactorily on "Orlon"?

Dr. Meunier: No, I would say we have not produced a satisfactory black on "Orlon."

Question: What would the situation be in padding two or more acetate colors on "Orlon" without any tailing in commercial-sized rolls?

Dr. Meunier: I am afraid we have no such experience to fall back on to answer that question, but in the laboratory we find that additives in the pad liquor, are effective in stabilizing mixtures of dyestuffs. For example, a little of Sodium CMC in the pad liquor stabilizes the dispersion sufficiently, we believe, though we would not expect very much trouble along that line.

Question: In the cottage steaming you speak about development of shading. Were the rolls festooned?

Dr. Meunier: Our cottage steamer is just an autoclave. We wrap the fabric with interleaving cloth.

Question: Would you get complete development of shade if you did pass them on a perforated shell in cottage steaming?

Dr. Meunier: That is a question that is hard to answer. We have often speculated about that. We certainly cannot answer it. We can guess that penetration of a roll of fabric on a perforated shell would not be good enough for this kind of process. We believe you would have to have it in festooned condition.

Comment: I was speaking from the angle of production costs.

Question: In the use of the toxic agent in your dye bath as the carrying agent, has any thought been given to possible complaints later on the question of skin disorders or dermatitis?

Dr. Meunier: Yes.

Question: To what extent can various classes of dyestuffs dyed at high temperature be stripped, if necessary?

Dr. Meunier: Of course, that depends on the dye. We have stripped down some shades with "Sulfoxite" C using acid. That seems to be the best stripping medium. I think it is about the same story on any other fiber containing those same dyes. For example, on nylon it is difficult to remove these dyes. We cannot completely remove the anthraquinone type of dispersed acetate colors; we have stripped certain shades down to light greys and tans but not completely.

Question: What explanation is there for the assistant action of potassium carbonate in dyeing with vat colors?

Dr. Meunier: There are two or three things we could say about that. First, when potassium carbonate is used in the bath at such high concentrations, the leuco form of the dyestuff certainly is not in solution, so we may say that the fiber might be absorbing the color in the same manner as it absorbs acetate dyes.

Another thing we might consider is that the fiber might be surface hydrolyzed by so much alkali thus giving it greater affinity for the dyestuff on the surface. We do not believe that that is a good explanation, however, because our vat dyeings under pressure with potassium carbonate show that the fiber is not damaged.

Another explanation is that there is something about potassium salts which accounts for the dyeing. That is still a mystery to us. We have called it the potassium ion effect. In the earlier work we tried many salts other than potassium salts to try to get the same effect, and we failed.

Question: I would like to ask about the shrinkage in the fabric or fiber itself when you work it with the "Thermosol" process and when you work with the use of dyeing assistants such as swelling agents, as compared to the loss in elongation that you might get working at 212°F.

Dr. Meunier: I am afraid we do not have good data on which to base an answer to that question. We do know, however, that the shrinkage of "Orlon" is of a low order when it is subjected to dry heat at high temperatures. In other words, the shrinkage is quite low. I do not remember the figure; it is somewhere around two per cent. But I would rather an "Orlon" man told you that.

As far as the use of assistants is concerned, it is true that we do get some shrinkage at high temperatures. It would have to be taken into consideration when we attempt to dye on packages, for example. But we have been able to penetrate, in the laboratory, "Orlon" packages with acetate colors in the presence of metacresol.

Question: In the use of "Orlon" as a decorative fiber in a piece of cotton piecegoods that is subsequently to be vat dyed, it would be desirable to mercerize the cotton fabric. What effect would the caustic of mercerizing strength have on the "Orlon"?

Dr. Meunier: As far as I know, it would not have any effect. But the question should be referred to the "Orlon" people, I think.

Question: Do you expect the dyeing of "Orlon" staples to be appreciably different than the picture presented here this morning?

Dr. Meunier: Yes. I think that when an "Orlon" staple is made, it will probably be more dyeable than this. It is still in an experimental and developmental stage.

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Report of New York Section

A MEETING of the New York Section was held on November 18, 1949 at Kohler's Swiss Chalet, Rochelle Park, New Jersey. An informal social hour and dinner preceded the meeting.

The Nominating Committee, Patrick J. Kennedy, Chairman, reported the selection of Paul J. Luck as Councilor for a three-year term starting in January, 1950. Mr. Luck was unanimously elected. Charles W. Dorn, Section Chairman, announced the appointment of James J. Marshall as Vice-Chairman of the Corporate Membership Committee.

Henry L. Young, Chairman of the Corporate Membership Committee, reported that tickets covering registration had been sent to all corporate members in the section in an effort to encourage a larger attendance at the technical meetings. He asked for volunteers to serve on the Corporate Membership Committee.

The technical meeting consisted of the presentation of a paper "To Burn or Not to Burn" by Kenneth H. Barnard, Textile Resin Department, American Cyanamid Company and the showing of a color and sound film "Metachrome Dyeings with Metomega Chrome Colors" with explanatory remarks by Charles H. A. Schmitt, Sandoz Chemical Works, Inc.

The total attendance was about 200.

Respectfully submitted,

NORMAN A. JOHNSON, *Secretary.*

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NNE to Meet Jan. 27

THE first meeting during 1950 of the Northern New England Section will be held on Friday, January 27 at the Hotel Vendome, 160 Commonwealth Avenue, Boston, Massachusetts.

The program will include a paper entitled "The Textile Industry and Stream Pollution" presented by Joseph A. McCarthy, Chief of Laboratory, Mass. Dept. of Public Health Experiment Station, Lawrence, Massachusetts.

Reservations for the dinner preceding the meeting will be handled by Edward B. Bell, Textile Aniline and Chemical Co., 49 Blanchard Street, Lawrence, Massachusetts. (Tel. Lawrence 2-5625).

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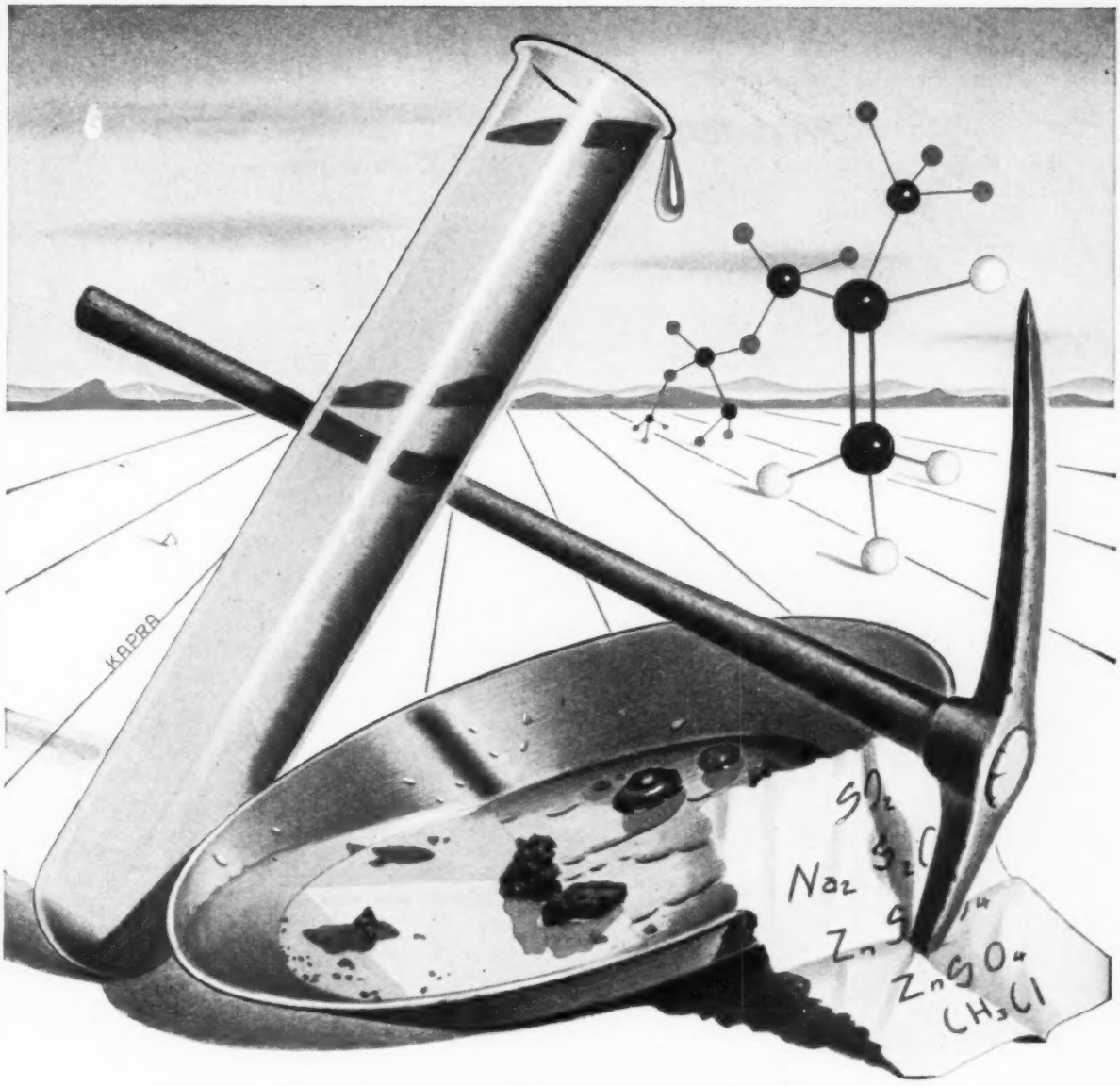

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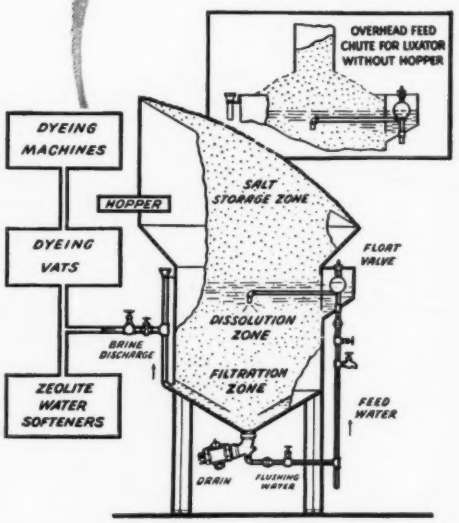
RULE of thumb measurement of salt by volume, in bucket or shovel, or by weight is inaccurate and wasteful.

For example, in measurement by dry salt volume, one cubic foot of dry salt will weigh *anywhere* from 66 to 84.5 pounds. And measurement by dry salt weight is "guesswork," too, for salt may contain from .05% to 5.0% moisture depending upon humidity, length of time in storage, varying bulk and area of the stock pile.

BUT... with the Lixate Process salt measurement is *exact*. Each gallon of Lixate Brine *always* contains *exactly* 2.65 pounds of Sterling Rock Salt. For the Lixator *automatically* makes 100% saturated, crystal-clear, self-filtered brine, that meets the most exacting chemical and bacterial standards. And this brine can be *easily* and *accurately* diluted volumetrically to any desired strength.

Too much salt in the dye bath drives excessive quantities of dye into the fabric causing spotting, streaking and white edges. Too little salt will not properly exhaust the dye. The exact amount of salt is best secured by use of Lixate Brine which always contains exactly 2.65 lbs. of salt per gallon.

Consult our Technical Service Department on your use of salt and brine. The experienced men on this staff will advise you on the proper location for Lixator and salt storage, pumping arrangements, types of pumps, meters, and valves. They will fit the *money-saving* Lixator into your plant operations. Write today!



HOW THE LIXATOR WORKS—*In the dissolution zone*—Flowing through a bed of Sterling Rock Salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. *In the filtration zone*—Through use of the self-filtration principle *originated by International*, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.

NOW AVAILABLE

The New Stainless Steel STERLING* MODEL LIXATOR*

For "Lifetime" Use
For Greater Economy
For Added Cleanliness

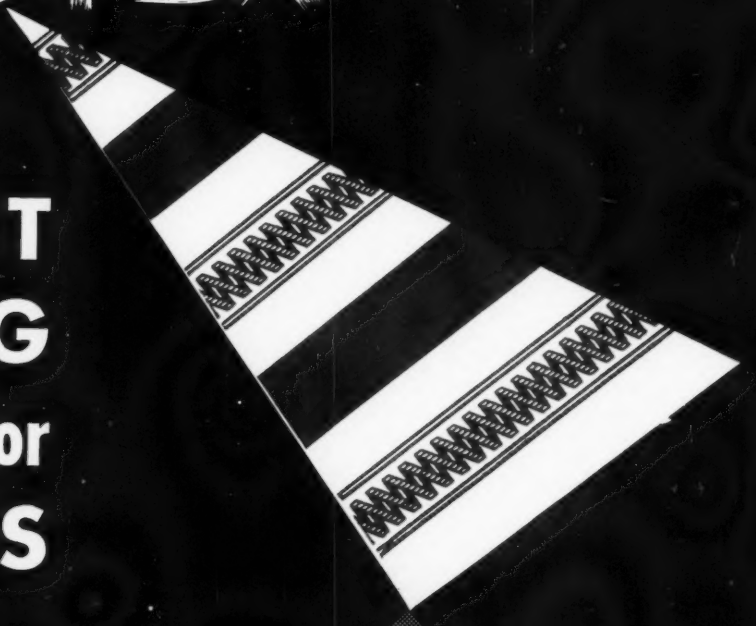
*Trade Mark

The **LIXATE** *Process*
REG. U. S. PAT. OFF.
for making brine

INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

ANDOTEX*

PIGMENT PRINTING COLORS for TEXTILES



New Bright Shades

Distinguished for

EXCELLENT FASTNESS
to SUNLIGHT • WASHING
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BLACKMAN-UHLER CO., INC.
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Will it Stay Color Bright?

This flannel fabric is made to take the hardest of wear and yet remain soft-to-the-touch . . . to withstand repeated washings and still appear bright and color-fast. That's because the manufacturer worked hand in hand with Amalgamated chemists to determine the proper softeners and dyeing assistants. Result: a sure sale immediately.

If dull colors and fuzzy patterns are ruining your sales . . . if the finish on your fabrics is not soft, find out how Amalgamated Products and Services can help you.

Amalgamated Chemical Corporation Products include Fabric and Hosiery Finishes, Dyeing Assistants and Scouring Agents. Amalgamated Field Representatives are experienced textile chemists, ready to assist and aid with any textile chemical problems in your mill. Our modern research and production laboratories are completely equipped with latest research and testing facilities. They are at your service for better fabrics, higher profits. Write or call Amalgamated.

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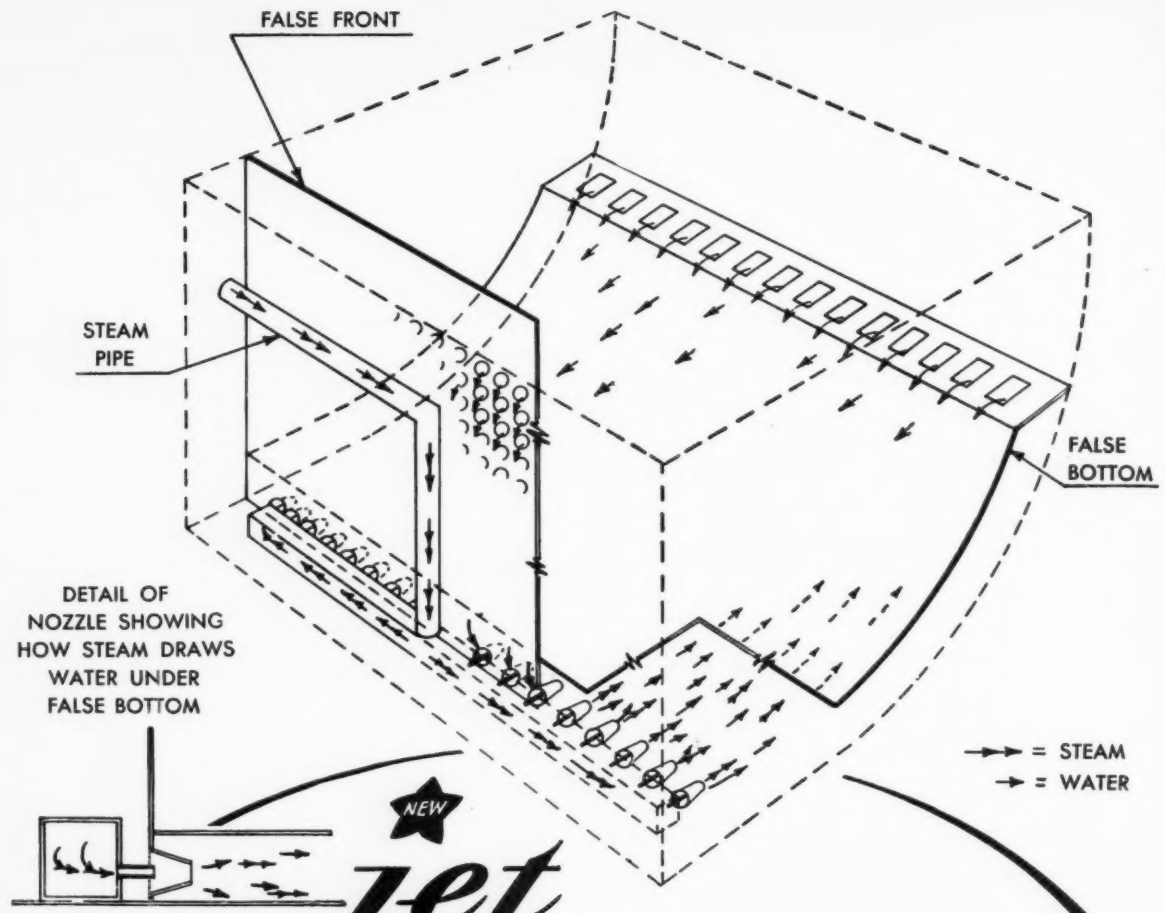

NEW

Jet

HUNTER offers a highly superior PIECE DYE KETTLE

★ The Hunter "*Jet*" offers the newest conception of modern piece dyeing. For the first time it is now possible to maintain temperature levels accurately throughout the kettle. No longer will you have temperature varying from 10° to 20° from front to back during the dyeing cycle and boil-off period. The results are more uniform — even dyeing.

The new Hunter "*Jet*" kettle assures bright, clear, "on shade" colors—another asset to save you money and assure customer satisfaction. The dyestuff is distributed through the same jets to insure perfect balance and blending of colors.

For additional information describing the jet system and other improvements in dyeing machinery, write Hunter for Bulletin SK.

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AMERICAN TEXTILE MACHINERY EXHIBITION ATLANTIC CITY MAY 8-12, 1950

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by *Fletcher*

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As the name implies, the "Twintainer" has two containers . . . both with bottom discharge to expedite unloading. One "Twintainer" will handle as much work as several ordinary extractors, because of the time saved in loading and unloading. It is the only extractor with all these advantages:

- Automatic Hydraulic Brake and Timer
- "Finger-Tip" Control—no push, no pull, no strain
- "Long Swing" Self-Balancing, with Adjustable Springs
- Safety Casing of Boiler-Plate Steel, covered on outside with gleaming stainless steel
- Stainless Steel Safety Cover, with automatic opening and closing.

"WHIRLWIND" EXTRACTOR

Like the "Twintainer", the "Whirlwind" also contains many exclusive features, including the labor-saving "finger-tip" control. Just set the pointer . . . and hydraulic brake goes "on" automatically, "off" automatically. "Finger-Tip" control provides longer brake life, smoother stop, and easier operation with less strain on the operator.

- Compact . . . uses less floor space
- Easy to load and unload
- "Silk-smooth" basket interior
- Large Capacity basket
- Direct v-belt drive

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Compactly designed as a space-saver, the 30" and 33" under-driven "Junior" Extractors have efficient self-balancing features; will handle more unbalancing than any other machines of equal sizes.

- Safer . . . machine won't start until safety cover is closed. Safety brake automatically shuts off power — locks after application. Stainless steel basket.
- Requires minimum floor space.
- Greater stability with heavy loads.
- Economical . . . lower power consumption — low maintenance cost.

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Wool Oils Compared in Tests at Textile Institute

SOCONY-VACUUM has recently completed extensive laboratory-controlled tests of wool oil performance on woolen mill equipment of production size. In these tests, three Socony-Vacuum products, and three widely advertised competitive "self scouring" wool oils were compared in terms of fly loss, yarn strength and weight, fulling characteristics, and scourability.

It is a source of considerable pride to Socony-Vacuum that the data acquired in these tests indicate its new product, S/V Woolrex SS, to be a superior fiber lubricant in terms of fly loss and uniformity of yarn strength and weight, while, at the same time, S/V Woolrex SS is indicated to be a thoroughly satisfactory material in terms of fulling performance and scourability.

The factual data resulting from these tests were obtained through contract work with the Wool Department of the Lowell Textile Institute. The samples of wool oils used to process the wool in these evaluations were submitted to the Institute by Socony-Vacuum, and the processing machinery was operated by trained Institute personnel.

★ ★ ★

The data from the Lowell Textile Institute tests, and details of the procedures and equipment used, have been compiled as a Technical Bulletin that is available on request. Write to Socony-Vacuum, Chemical Products Division — or call your local Socony-Vacuum representative.

Process Products
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Socony-Vacuum Oil Co., Inc.
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for handling goods in the open width, stimulating yarn and fa scouring, from center folding

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for high speed drying of wide variety of fabrics and finishes

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a versatile dryer employing a new and different type of circulation

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a moderate capacity machine; can be designed for drying or curing

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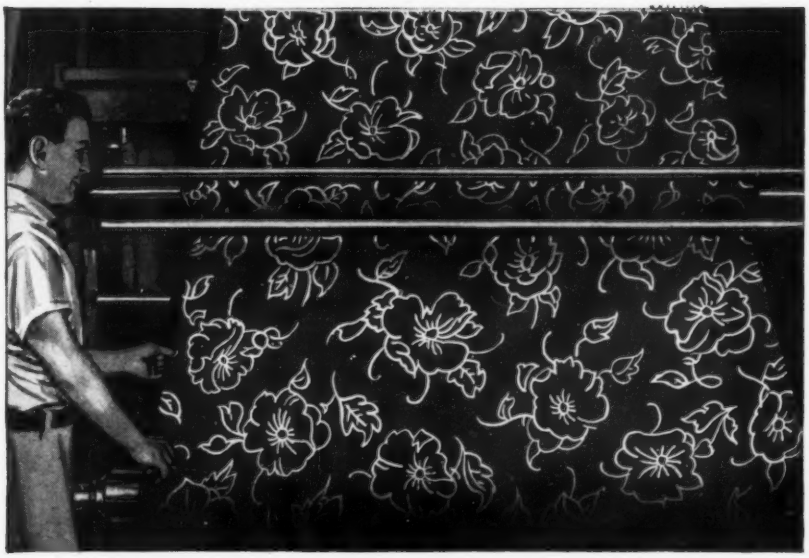
ENGLISH Overfeed TENTER
for obtaining desired "hand" through principle of overfeeding and tenter drying

MULTIPASS Airflow DRYER
for achieving the ultimate in finished appearance of goods dried without tension

"SLACK" DRYER
for use in shrinking ranges on goods to be shrunk in both warp and filling direction



Through the years Proctor equipment has always been prominent in the finishing plant. Today it is even more prominent than ever—for it is "in step" in every respect with the great strides made in finishing operations in recent years. As a matter of fact, in many instances Proctor engineers have worked closely with textile technologists in perfecting entirely new processes which are making textile finishing history. The equipment briefly described here simply gives a quick picture of the basic types of drying and curing systems that may be supplied by Proctor & Schwartz, Inc. for the finishing plant. Because of their intimate knowledge of the needs of the textile finisher—it will be to your decided advantage to consult Proctor & Schwartz, Inc. as soon as the need for new drying or curing equipment becomes apparent.

Write for this Proctor Booklet

While intelligent recommendations on the type of equipment most suitable for your particular requirements can be made only on the basis of complete knowledge of your problem—there are certain basic types of equipment engineered and built for the textile finishing plant. A profusely illustrated, 16-page booklet which tells the story of Proctor Equipment for the textile finisher is yours for the asking. You'll find it very informative and well worth having. Write for your copy today.

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Votator

STARCH COOKING APPARATUS

for the continuous, closed, controlled processing of

- **STARCH PASTE**
- **VAT REDUCTION PASTE**
- **VAT STANDARD PASTE**
- **BACKFILL**

A continuous flow of material, in a closed, controlled system. That's the idea behind Votator starch cooking apparatus. It's basic. It's versatile. And the advantages of Votator starch cooking apparatus are being applied to more and more textile starch processing problems.

Generally speaking, Votator starch cooking apparatus functions in less floor space than is otherwise required and with less manpower. There is no spillage, no waste. Control over quality is mechanical, foolproof. Use of heat transfer medium is effective, economical. Continuous processing under pressure permits higher cooking temperatures than are obtainable with open kettle methods.

Write for case history facts about the application in which you are interested.

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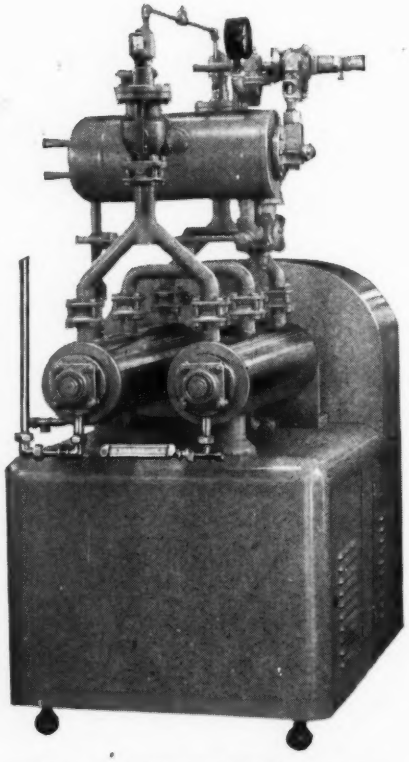
This Votator unit cooks and plasticizes 4000 pounds of smooth, homogenous backfill per hour.



When we say Votator starch "cooking" apparatus, we mean cooling, too. One Votator unit raises the temperature of vat paste to 230° F. in seconds. Then this Votator unit swiftly cools the paste as it flows through the closed controlled mechanism.

VOTATOR is a trade mark applying only to products of The Girdler Corporation.

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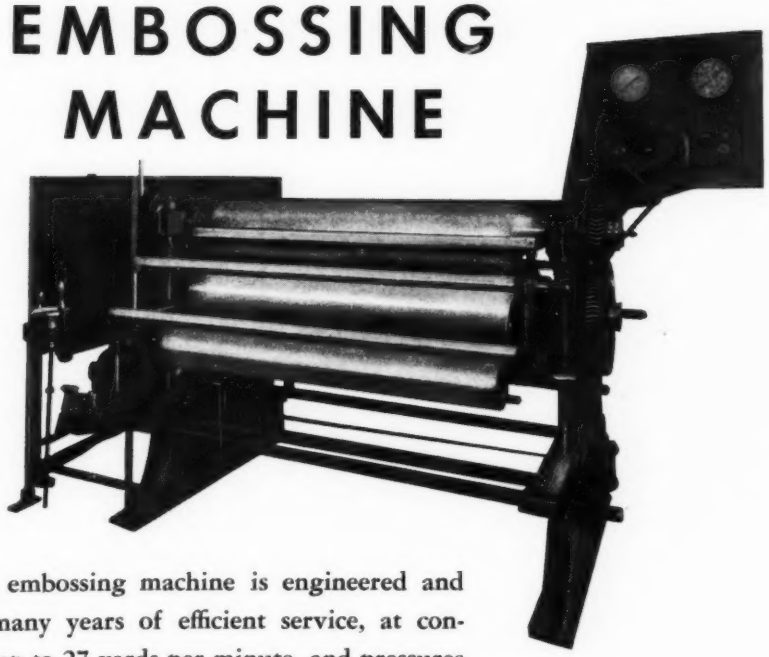
Gives a Better Pebble

HINNEKENS

EMBOSSING MACHINE



The air-operated embossing machine is engineered and constructed for many years of efficient service, at controlled speeds of up to 27 yards per minute, and pressures up to 8 tons, and gives perfect continuity of pattern relationship at all times.

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1. The face is 60" to suit
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6. Roll equalizing device prevents taper on roll ends. (Patent 2373027)
7. Improved automatic pattern-locking device
8. Foxboro double-dial air-pressure regulating device.
9. 2 H.P. A.C. motor
10. Rolls driven by special herring-bone gears.

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The Hinnekens line of Textile Machines Includes:

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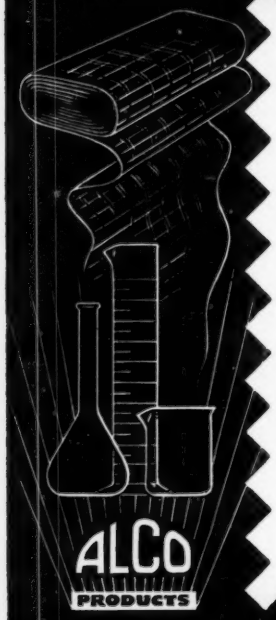

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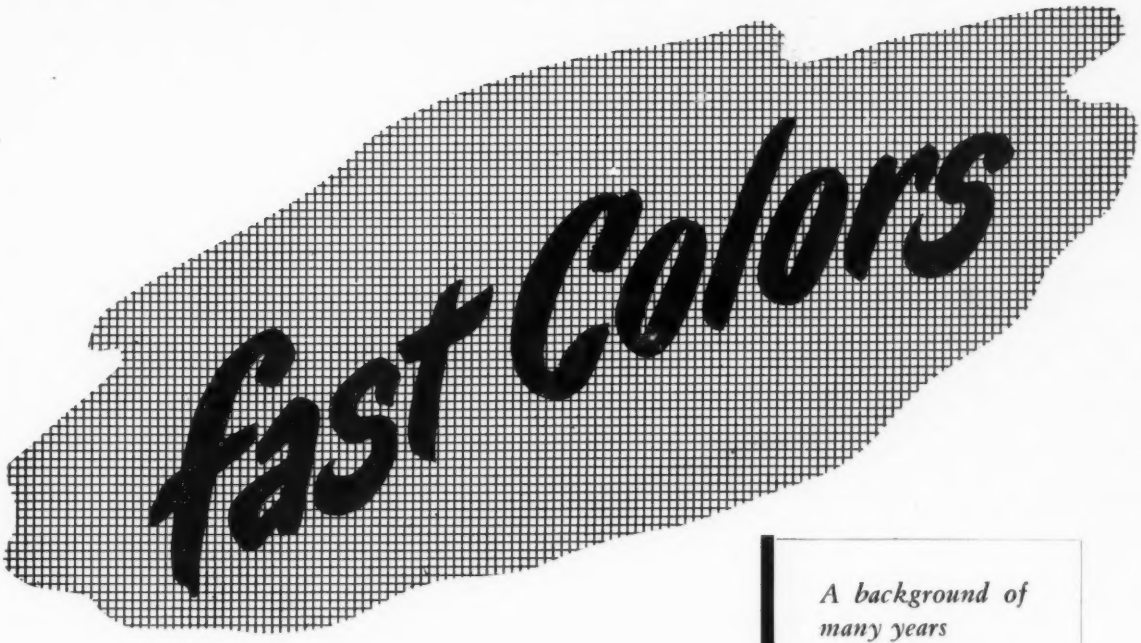

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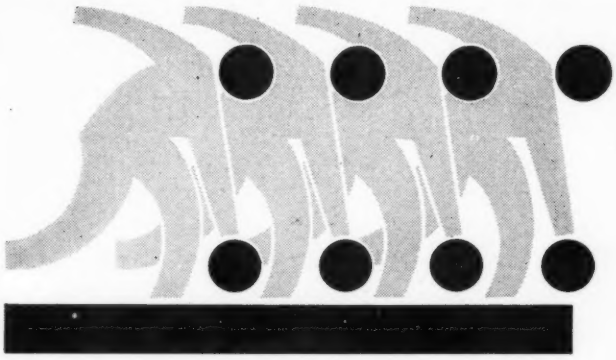

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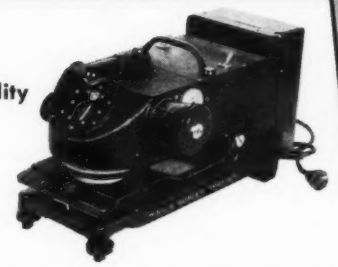

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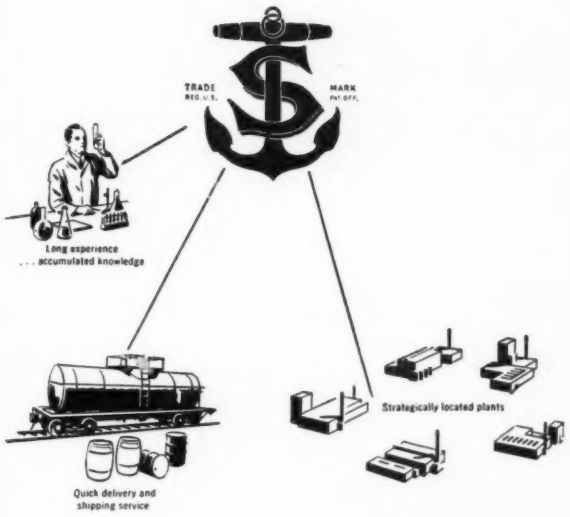

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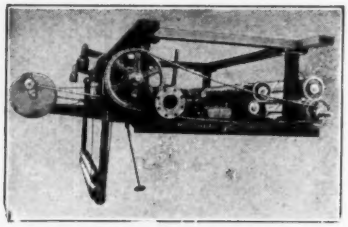

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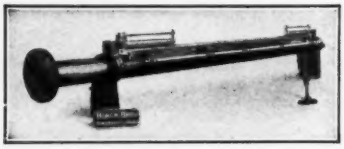

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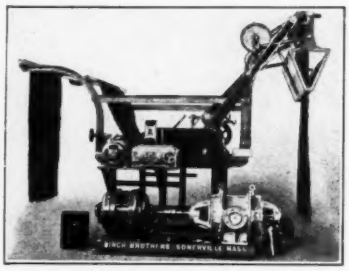

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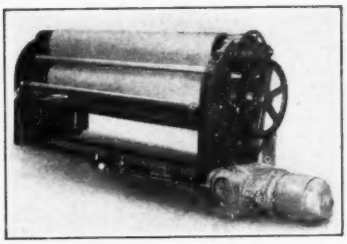

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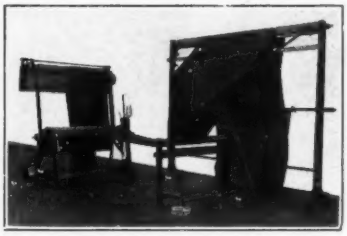

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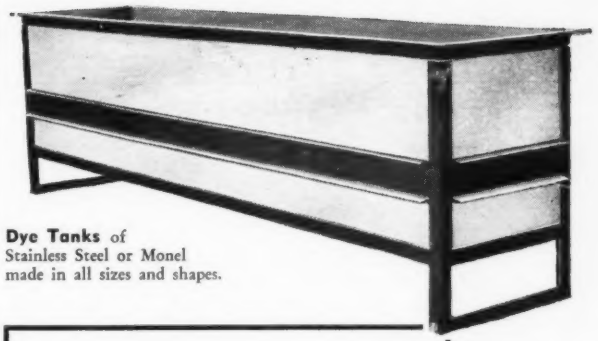

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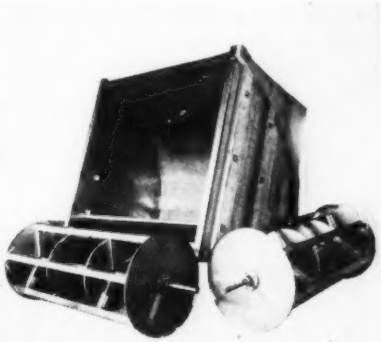

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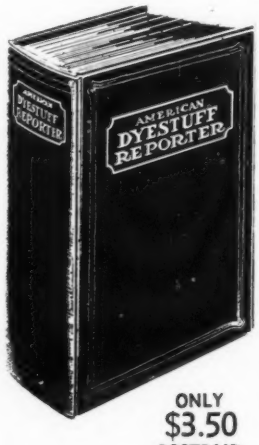

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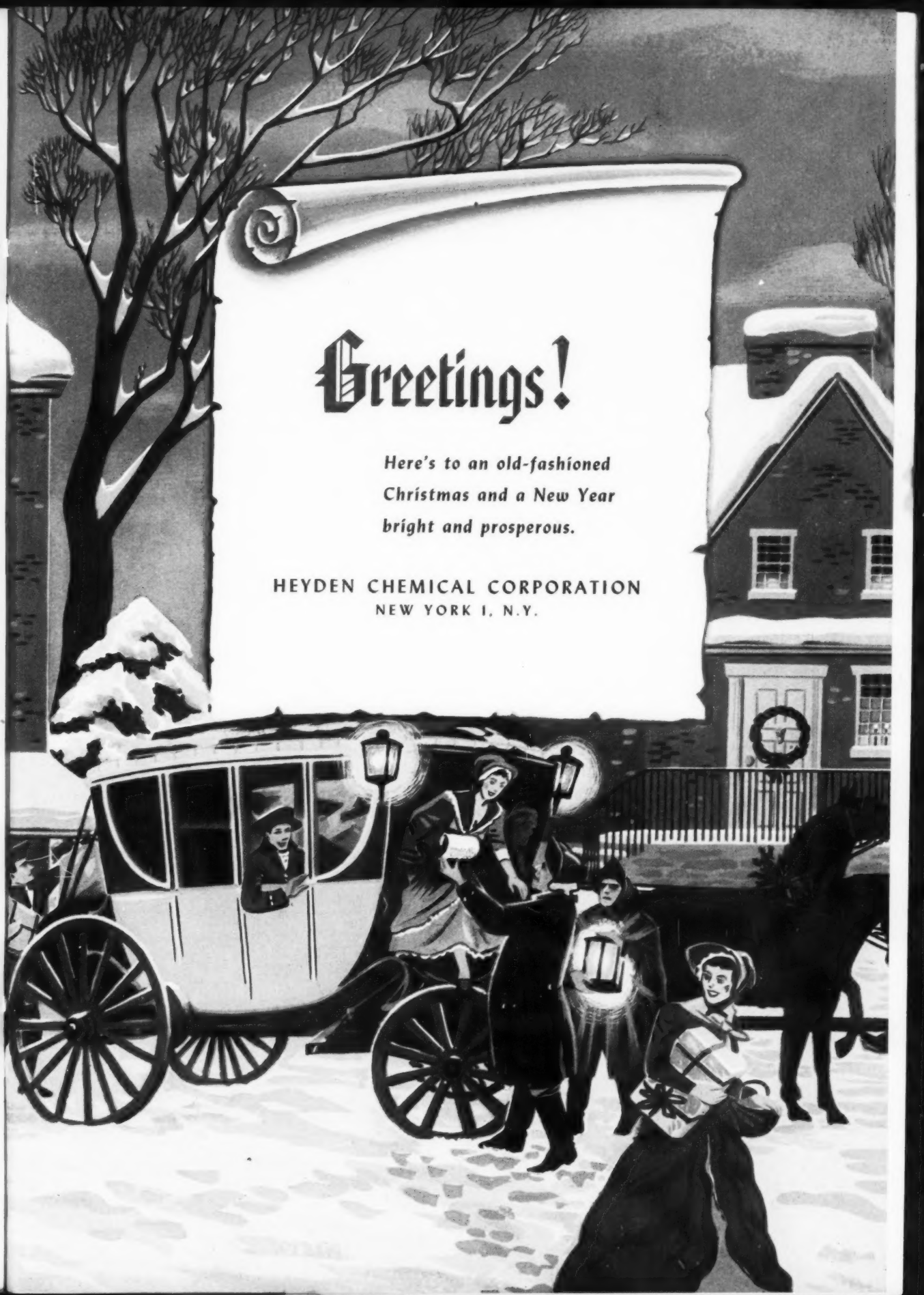
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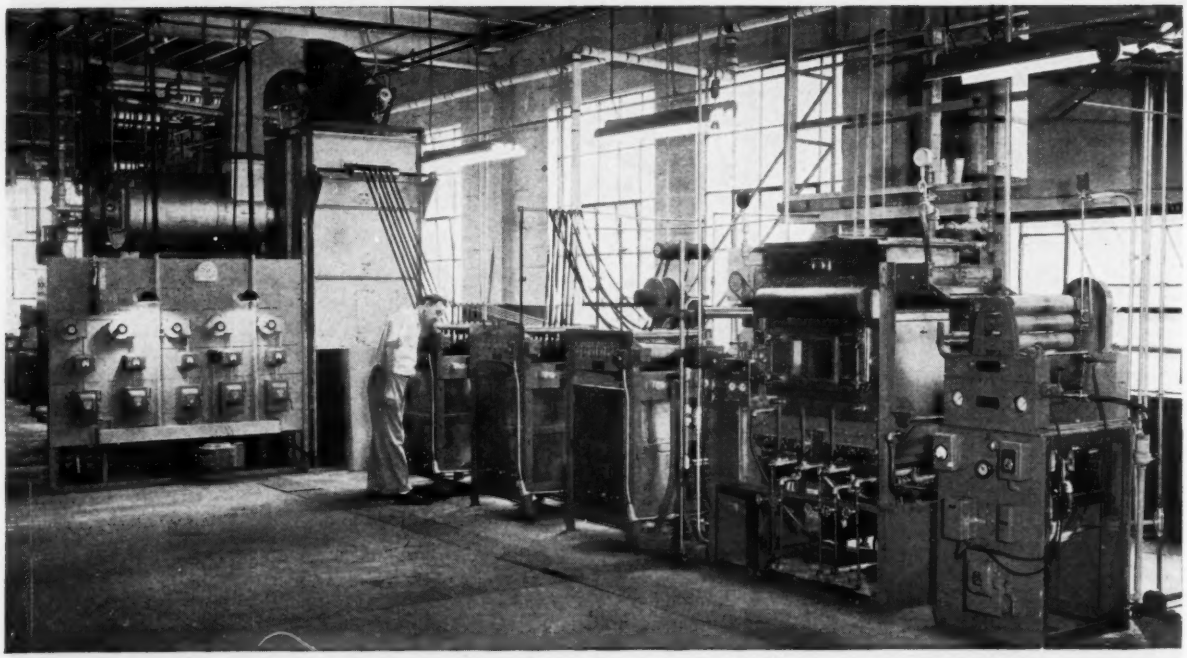

The new Butterworth Range for narrow fabrics includes: 3-roll Laboratory Padder with liquid level control, Air Dryer, Take-off Mechanism, 3-roll Laboratory Padder with liquid level control, Laboratory Steamer, three 6-roll washers, Air Dryer and Curer, 10-cylinder Dryer and Finishing Section, and Take-off Mechanism. Partial view of Range is shown above.

600 Yards of Narrow Fabrics Per Minute

Now you can do continuous dyeing and finishing of narrow fabrics at a rate of 600 yards per minute with the new two-stage Butterworth Continuous Dyeing and Finishing Range. From undyed fabric to windup in 70 seconds!

Here is the first vat color range for narrow fabrics. So *flexible* it can also be used as two separate sections on direct colors with a total production of 1200 yards of narrow fabrics per minute. Fifteen strands at 40 yards per minute can be handled in this new range.

Here is the ideal range for hat bands, ribbons, tapes and other narrow fabrics where profit depends on volume. Advantages of the new Butterworth Range include high speed production, less floor space and appreciable savings in labor, chemical and steam costs.

Check some of the outstanding features:

- Variable speed control equipment
- Automatic temperature control for Dye Box, Washer boxes, Dryer and Curer
- Range occupies area only 60 feet long
- Optional take-off mechanism

Compare older methods of dyeing and finishing narrow fabrics in skeins, involving separate operations, with finishing in range. Savings become increasingly evident. Are finishing plant problems slowing down your narrow fabrics production? Then find out today how you can build profitable production volume with this new Butterworth Finishing Range. Write or call:

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H. W. BUTTERWORTH & SONS COMPANY, Phila. 25, Pa. • Providence Div., Providence R. I. • 1211 Johnston Building, Charlotte, N. C. • In Canada: W. J. Westaway Co., Hamilton, Ont.

ANOTHER "STIENEN" ACHIEVEMENT

THE
Stienen
Reg. Trade Mark

RAYON PACKAGE DYEING MACHINE

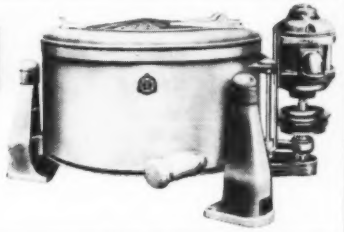
has been developed to supplement our Rayon Cake Dyeing Machine. It provides the dyer of rayon yarns with far greater flexibility.

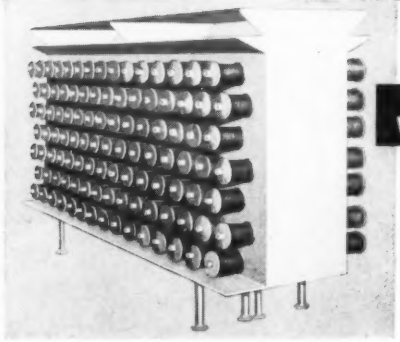
While our Rayon Cake Dyeing Machine has its distinct advantages for certain mills, the "Stienen" Rayon Package Dyeing Machine is of utmost importance to the entire rayon processing trade.

Package dyeing of rayon is ideal wherever the source of supply is in wound form. Rayon from any size cakes, cones or tubes may be dyed in the package form. Different types of rayon and synthetic yarns may all be dyed in this machine.

The cost of rewinding to the package for dyeing is negligible in comparison to the cost of skein winding. Quality of the original yarn is maintained, as no fibre disturbance takes place in our method of rayon package dyeing.

plus A NEW CENTRIFUGAL EXTRACTOR





plus RAYON PACKAGE DRYER

BUILDERS OF
Cotton and wool dyeing machines
for beams • packages
raw stock • skeins • rayon cakes
dye spindles • perforated tubes
centrifugal pumps • extractors and dryers

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"For brighter vat dyed colors on cotton, linen and rayon. Use this powerful concentrated reducing agent for faster, cleaner results on wool, cotton and rayon."

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"A blend of vegetable oils and specially selected fats for a superior, non-foaming, finishing oil. High in combined SO_3 and stability. Excellent for sanforizing."

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A concentrated reducing agent, highly stable at high temperatures, outstanding for discharge printing. Employed successfully wherever the reducing agent must dry into the fabric and retain its reducing power.

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"A superior detergent and wetting agent, effective in acid and alkaline liquors at all temperatures from cold to boiling."

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